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Addresses.

RANDOM REMARKS ON TUBERCULOSIS.*

BY JOHN B. HAWES, 2ND, M.D., BOSTON,

Assistant in Medicine, Harvard Medical School; Assistant Visiting Physician, Massachusetts General Hospital; Secretary, Massachusetts Trustees of Hospitals for Consumptives.

IN fighting any such insidious and chronic disease as tuberculosis, it is important, once in a while, to take account of stock, in order to find out exactly where we stand as to the progress we are making, if any. It is for this purpose that the Framingham experiment is being carried on. The National Tuberculosis Association is trying to demonstrate at Framingham, by the use of every known modern health measure, exactly how much such measures will accomplish. This experiment is being watched with the greatest of interest by all of us engaged in tuberculosis and health work.

For the past fifteen years, I have been intimately associated with the tuberculosis campaign, both as a private physician and as a public health officer. In my private practice I am meeting with countless tragedies, so that I often feel discouraged over the outlook, but when I see the progress that Massachusetts has made during the past few years, I feel that after all we are really making progress.

In 1907, for instance, the death rate for tuberculosis per 100,000 was over 150; in 1917 it was 119. Ten years ago, there was one state sanatorium, with 350 beds, and practically no other beds available except in a few private institutions. In 1917 there were over 3,000 beds, with at least a thousand more to be available in the near future. In 1907, with the exception of a few large out-patient departments, where only very mediocre work was done, there were practically no public health or tuberculosis dispensaries. At the present time there is a tuberculosis dispensary in every city or town of over 10,000 inhabitants in this State. So it is evident that we are making progress.

The Effect of Public Health Measures on the Private Physician and his Practice.—I have been interested in trying to find out the effect of all this state activity in tuberculosis on the private physician and his work. How much does it affect us as general practitioners? Does the good that it does outweigh any possible harm or injury to our practice?

I asked these questions of a large number of general practitioners in Massachusetts. One hundred and seventy-one replied that this had

* Read at a meeting of the Brockton Medical Society, March 14, 1918.

no effect; seventy-eight replied that it helped them in their work; while in no case did any physician say that it did any harm. I also inquired as to the effect of the tuberculosis dispensary on the practice of the private physician. To this question, one hundred and forty-three stated that the dispensary had no effect; seventy-one that it helped them in their practice; five that it did them harm. I cannot see how such a dispensary can do harm, and I can easily see how it can do much good if properly utilized. I note with interest that in one case it is called a "public health dispensary" rather than a "tuberculosis dispensary." I feel that the leaving out of the rather ugly name "tuberculosis" is a distinct advantage.

After all, whether a dispensary does or does not do good depends almost entirely upon the qualifications of the nurse in charge. If the nurse in charge of the dispensary—and none such is worthy of the name without a nurse—is well trained and tactful and enthusiastic, a tuberculosis dispensary will be of distinct value to every physician in his private practice, not only for the patients whom he sends direct to the dispensary, but also in helping out in the supervision of patients who continue to consult him privately. Particularly in the smaller cities, the tuberculosis dispensary fills an important position, and should receive the support and encouragement of the entire medical profession of the community.

The Policy of Massachusetts in Regard to Tuberculosis.—It has been said at the State House by certain persons not acquainted with facts, that Massachusetts has no definite policy according to which it does its anti-tuberculosis work. Nothing could be further from the truth. Massachusetts has a very definite policy to which it has adhered faithfully during the past ten or fifteen years. When our county tuberculosis hospitals are completed, this State expects to have in operation a system for handling tuberculosis which will compare favorably with that of any other State in this country.

According to this plan, which I hope soon to see realized, physicians in their private practice or in the tuberculosis dispensaries, will be depended upon to discover the cases of tuberculosis and to make the diagnosis as early as possible. Incipient and favorable cases will be referred to our state sanatoria. Not only Rutland, which has long been reserved for this class of patients, but also North Reading, Lakeville, and Westfield will be reserved primarily for patients in the favorable stages of the disease. In the large cities, local tuberculosis hospitals will continue to occupy the position that they do now, for patients with far advanced and progressive disease, who should be near their family, home, and friends, for emergency cases and for those awaiting admission to our state sanatoria or elsewhere. I hope and believe that the waiting list for our state sanatoria, now distressingly long, will be so short that every physician making application for a patient will be able to obtain admission for him within a reasonable period.

The county tuberculosis hospitals will fill the gap that now exists between the sanatorium and the local tuberculosis hospital. Emergency cases, and all patients from the scattered agricultural communities and from the smaller towns and villages will be cared for in these county institutions. Early and favorable cases needing treatment at once can here be looked after while awaiting admission to a state sanatorium. Patients concerning whose eligibility for Rutland or elsewhere there is some doubt can here be placed on trial and kept under observation until they can demonstrate, by the improvement they make, their right to enter a state sanatorium. I hope that at each one of these county institutions, as now exists at our four sanatoria, out-patient departments and dispensaries will be established, where doctors can send their patients from miles around for observation and advice, and where ex-patients can return for supervision as often as necessary. I likewise hope that some provision for children will be made at these county hospitals, so that there will not be the long delay that now exists before a child can be admitted to Westfield to get the treatment and schooling of which he is so urgently in need. Every physician should realize that these new county hospitals are not to be isolated institutions, but that they are part of a definite and carefully thought out plan according to which Massachusetts expects to handle its tuberculosis problem efficiently and well.

There are many physicians who criticize our present plan of action, or who say we have no definite plan. There are likewise many who criticize our existing institutions, and who doubtless will criticize the county hospitals now

in the process of construction. In asking nearly 250 physicians whether or not they used the state sanatoria, and if not, why not, I received a variety of replies. Of those who answered this question definitely, 71 stated that they used the sanatoria for all of their patients that could be admitted; 17 used them occasionally; 20 used them very little, and 8 said they never sent their patients to a state sanatorium. Some gave as their reason for not advising sanatorium treatment that the waiting list was so long that both patient and physician get discouraged. To this I have no answer, except to deplore the fact, and to hope that the county hospitals will lessen the strain and relieve the situation.

Not a few doctors stated that the food was bad. To this I would at once reply that I would urge any doctor who feels this way to go to the nearest state sanatorium and sample the food for himself, or to find out more details and more facts concerning it before accepting such a statement from his patient.

A few doctors complained that discrimination was used in the admission of patients. I can simply reply to this that every patient is admitted from the central office at the State House; that the Board of Trustees, of which I am secretary, has entire charge of the admitting of patients, and that during the ten years that this Board has been in existence, at no time has discrimination been used. The medical profession must bear in mind that the only information we have to act on concerning these patients is that given on the application blank, and that no matter how accurately this may be filled out it cannot give an accurate mental picture of the patient himself, and his exact condition. For instance, when a doctor makes application for a patient in the advanced stages of the disease who he nevertheless feels is suitable for sanatorium treatment, notwithstanding the fact that he knows, or should know, that we do not accept advanced cases, he should write a note to that effect. If he would do this, describing the patient's condition and stating that although the signs in his lungs are extensive and he must therefore be classified as advanced, his condition on the whole is very good and that he is up and around every day and not a bed case, etc., an exception would be made in his case. Such information as this is seldom given; were this done more frequently, it would save much trouble and do away with considerable undeserved criticism of our method of admitting patients to our sanatoria.

There are a few instances—and I am glad to note a very few—where doctors have persistently made application for patients, classifying them as incipient, although the patient was in the advanced stages. This, if it happens once or twice, can be condoned. If, however, it happens as a rule, it is necessary either to refuse to accept the applications from such a physician, or to have his report confirmed from another source. I should like to have it definitely understood, however, that there is no discrimination used at this office; that the patient or the doctor who knows no one at the State House receives exactly as fair and just treatment as the patient who knows innumerable Senators and Representatives; that the patient's name is placed upon the waiting list in the order of the filing of the application; that I am acting under definite instructions not to admit far advanced and progressive cases to our sanatoria, and that no one regrets the length of our waiting list and the consequent delay in admission more than I.

The Diagnosis of Pulmonary Tuberculosis.—There is very little new to be said on this subject. While there is no doubt that the medical profession in Massachusetts ranks high in its ability to diagnose tuberculosis in its early stages, there is still room for vast improvement. I am meeting with two types of mistakes: First, there is the group of patients in whose lungs the signs are vague and indistinct and who are therefore assured by their physicians that they have no pulmonary disease, despite the fact that the constitutional signs and symptoms, such as loss of weight and strength, fever, rapid pulse, etc., demonstrate only too clearly that the patient is sick, and, in all probability, sick with tuberculosis. Next, there is a large group of patients with acute and sub-acute pulmonary infections, usually at the base of the lung, of pneumococcus or streptococcus origin, that have been so prevalent during the past year, whom physicians, generally the younger and more enthusiastic ones, who are on the hunt for tuberculosis, are diagnosing as consumptives. I would urge, therefore, as I have many times before, that every physician remember that thoroughness and common sense on his part are the chief factors in the correct diagnosis of tuberculosis; that facts obtained from the history of the patient and constitutional signs and

symptoms are of more importance than local signs in the lungs, and, finally, that in many cases the diagnosis cannot be made at once, but that only after careful study can we arrive at the truth, and finally that it is unnecessary, unwise, and unjust to tell the patient that he is a consumptive until we know that we are telling him the truth.

Home versus Sanatorium Treatment of Tuberculosis.—Prior to the construction of our newer sanatoria at North Reading, Lakeville, and Westfield, and the various local tuberculosis hospitals, home treatment was practically the only kind of treatment of consumption that was available for the vast majority of patients in this state. There was nearly ten thousand consumptives in need of active institutional treatment, and only four or five hundred beds.

Dr. Joseph H. Pratt, of Boston, has shown us what home treatment really is, and what it can accomplish. I have spoken on this subject in practically all the cities and many of the towns of this state during this period ten or fifteen years ago when so few beds were available, urging home treatment, according to the methods outlined by Dr. Pratt, and describing how it could be done. This did not mean then, nor does it mean now, that I would use home treatment as a substitute for sanatorium treatment except in the rarest of instances.

In numerous articles, Dr. Pratt has tried to prove that home treatment is more efficient and more economical than sanatorium treatment. He has based his conclusions on two or three hundred cases that have been in his class under his own personal supervision. I do not feel that he has made it sufficiently clear that, although his patients are not selected according to the stage of the disease, they are selected in a far more important sense of the word, in that no one is admitted to his class who is not willing and able to carry out treatment according to his directions and to attend to every minute detail for as long as Dr. Pratt deems it necessary. This means a grade of intelligence and faithfulness on the part of the patient which we cannot demand in our state work, where we deal with patients by the thousands and not in small groups, and where over 50% are of foreign parentage and of a very low grade of mentality. Could the work of Dr. Pratt, including his own boundless enthusiasm and energy, and his willingness to give all the necessary time to this work, be endlessly multiplied, along with a wealthy church to provide certain necessary funds, I have no doubt that home treatment might play a vastly more important part in our anti-tuberculosis campaign than it does at present in Massachusetts. This is manifestly impossible, however. Of 250 doctors answering the question as to whether they preferred home treatment as a substitute for sanatorium treatment, 179 said emphatically "No;" 26, "Yes;" while over 50 qualified their remarks by stating that they preferred home treatment in certain cases where there was sufficient intelligence, and where the financial situation made it possible.

At a recent meeting of the City of London Medical Society, this subject of home *versus* sanatorium treatment was considered by eminent authorities. The consensus of opinion was very definite that sanatorium treatment, followed by efficient after-care, was by all means the best and most efficient weapon we have in handling our consumptive patients in particular and the tuberculosis campaign in general.

Personally, I am firmly convinced that practically every tuberculous patient at some time or other should have the training that sanatorium treatment alone can give, and that home treatment should be carried on only after the patient has had such training.

The Present Status of Tuberculin and Artificial Pneumothorax in Treatment.—I use tuberculin in the treatment of pulmonary tuberculosis little if any. I firmly believe that it has its place, and that Dr. Trudeau during his lifetime demonstrated that patients with pulmonary disease who had been through a course of tuberculin treatment had fewer relapses than those who had not had such treatment. Tuberculin, however, is a very potent agent for harm as well as for good, and I do not believe that it should be given unless the patient is under absolute supervision in a hospital, sanatorium, or its equivalent. The majority of my patients who can afford to do so, I send to Saranac Lake, and I leave the question of tuberculin entirely to the physician in charge. I do not believe that the average general practitioner should use tuberculin either in diagnosis or treatment of pulmonary tuberculosis. The question of tuberculin in non-pulmonary disease is an entirely different one, but too large a subject to be discussed here. Briefly, my position as regards its use

in non-pulmonary tuberculosis is to be sure that it does no harm. In many cases I know that it does good.

Concerning artificial pneumothorax in pulmonary cases, my feeling is very much the same as it is in regard to the use of tuberculin. I have never used this method, nor do I intend to use it until I have a sanatorium of my own, where my patients can be under absolute and constant supervision. Here, again, when I send a patient to Saranac Lake or to one of our state sanatoria, I leave the question of the use of artificial pneumothorax entirely in the hands of the doctor to whom I refer the case. While I do agree that in certain hemorrhage cases and in certain others that have come to a standstill by other methods of treatment, collapsing the lung may do a great deal of good, I do not feel at all sure that the good is permanent, or that its advantages outweigh its possible dangers. I do not feel that a physician, no matter how expert, is justified in the use of this method of treatment where his patients are not under absolute supervision at a sanatorium or hospital all the time, and I cannot help but feel that a considerable part of the improvement which has been attributed to the use of nitrogen gas in collapsing the lung is due to the fact that the patient realizes the necessity of absolute rest to an extent he has not realized before.

Heliotherapy.—I know of no more striking advance in the treatment of tuberculosis than in the use of sunlight, or heliotherapy. It is true that our New England climate lends itself little, if any, to this method, but nevertheless it has proved of distinct value in New England and in other eastern states. At Buffalo and Staten Island, N. Y., Providence, R. I., and here in Boston this method has been used with success. While its greatest sphere of usefulness is in non-pulmonary disease, particularly in bone and joint cases, it may well be introduced as an adjunct to the hygienic open air treatment of pulmonary tuberculosis. It is essential to remember, however, that sunlight is a powerful agent, and can do harm as well as good. I would advise every physician who considers using this method of treatment to make a careful study of the work that has already been done and to read both the original articles of Rollier, who first called attention to it, and the work of others in this country on the subject.

Outdoor Sleeping and Outdoor Schools.—While it is farthest from my thoughts to let it appear for a minute that I am not a strong believer in fresh air and in cold air in the treatment of tuberculosis in adults and in children, I do feel that in certain cases we are over-emphasizing the value of cold air and are forgetting that air to be fresh and stimulating need not be at zero temperature.

Dr. Henry D. Chadwick, superintendent of the Westfield State Sanatorium, has under his charge over one hundred and fifty children of fourteen years and under, who attend an open-air school at his institution. He has come to the definite conclusion that the temperature of such a school should not go below thirty or thirty-five degrees. He believes that extreme cold, just as extreme heat, saps the vitality of a child and works for harm rather than for good.

While I firmly believe that there should be more open-air schools and rooms than there are now, and that our present policy of waiting until a child becomes anemic, run down, and in generally poor condition before we give him the fresh air of which he is so urgently in need is a poor policy, on the other hand, it is not necessary or wise to go to extremes in this matter. We must use judgment and common sense in dealing out our fresh air, just as we do our exercise and rest. I have seen numerous children this winter who, I believe, have been harmed rather than helped by enthusiastic parents and teachers who have insisted that they remain out-of-doors in zero weather. The fact that the child says that he feels perfectly warm and comfortable is not good evidence on which to decide such a matter as this.

To a less degree the same applies to adults. One of my patients at Saranac Lake recently told me that he was sleeping out-of-doors at a temperature of fifty degrees below zero. Apparently it agreed with him, but I do not believe that it was with the entire consent and approval of his physician. Perhaps he was the exception who proved the rule.

Outdoor sleeping for eight months of the year would be beneficial for every one of us and for our patients, but I do not feel that it is always entirely beneficial for the remaining four months.

Rest and Exercise.—I am glad to note that the value of rest in the treatment of tuberculous conditions is being emphasized in the literature of today on this subject. I am meeting with fewer and fewer patients who have been told by

their physicians to go to the mountains, and to live on a farm, and to lead a healthy open-air life with plenty of exercise.

There is probably no factor which is so important in the successful treatment of a case of tuberculosis as rest. One great difficulty in this matter, however, is that the majority of patients and their friends, and indeed many physicians, have little idea as to what "absolute rest" really means. I have seen patients who told me that they were absolutely at rest, while the same patient was getting out of bed, walking to and from the bath-room, sitting upright in a chair, and in other ways using up strength and energy which he might have saved. I have seen physicians allow a patient to cough ceaselessly night and day, instead of giving him a sedative of some kind to check this cough, or trying to concentrate the coughing spells and the raising of sputum into a few definite periods.

Absolute rest, in my opinion, means that the patient is not allowed to feed himself, that all unnecessary movements are forbidden, and that codeia, or some other drug, is used to prevent coughing and to promote sleep, and finally that visitors are rarely allowed. Physical and mental rest are both essentials in the treatment of tuberculosis.

The Value of X-ray in Diagnosis.—I am glad to note that the physicians in Boston specializing in the x-ray have a very conservative attitude in regard to its value in the early diagnosis of tuberculosis. In other cities, x-ray evidence is far too often rated higher than that obtained from a careful clinical examination of the patient.

I believe that x-ray evidence is of great value but that it should always be subsidiary to a careful and painstaking examination of the patient, his lungs, his history, and particularly the constitutional signs and symptoms.

MEDICAL COMPETENCE AND HOSPITAL EFFICIENCY.*

BY FRANCIS D. DONOGHUE, M.D., BOSTON,

Medical Adviser of the Massachusetts Industrial Accident Board.

COMPETENT medical services must be the mainspring of proper compensation.

* Read at the Fourth Annual Meeting of the International Association of Industrial Accident Boards and Commissions, at Boston, August 22, 1917.

At the risk of repeating, perhaps, some things that I have said before, I will endeavor to speak on hospital efficiency and medical competence. Many people might suggest that it would be better to speak of medical incompetence and hospital inefficiency, but we should take the bright side of the shield and as much efficiency as we have on the side of the shield toward us, and not look for gloom. Perhaps in the beginning, a consideration of the medical aspects of workmen's compensation law from the standpoint of a medical adviser may be timely.

In the first place, it is inconceivable to my mind how a Board administering an accident or injury law can get along without medical advice. I know that men can acquire wisdom. I know that men have acquired great wisdom, but to know medicine and its application to the things of industry without a technical training is absolutely impossible.

In the beginning of the law, we had as little medicine in our law as most states. The Board, in case of a dispute, could pick its impartial examiners. It could pass upon the reasonableness of physicians' fees; it could pass upon the adequacy of hospital treatment—all after the results were attained. The time the Board should have control—should have its finger in the pie—is before the results are attained especially the bad results.

Not having any provision in the law, it is advisable to take the advice of a very distinguished (one of the few distinguished) Republican of the State of Texas, who once said, "What are we here for?" We are here to get out of the law all that is in it for the *injured workman*, and in getting out all that is in it for the workman, we get out all that is in it for the employer of labor and the best for the community. If it be a poor law, a good commission ought to stretch it to the cracking point. If it be a good law with a poor commission, it will have a poor result just the same. The application of common sense to the law is a necessary and desirable thing, and the commissioners and laws, which are burdened with legal precedents and the decisions of the House of Lords, will not accomplish nearly as much for the rehabilitation of the injured worker as the commission which has in mind that merely paying the man money is never adequate compensation, and that he is only properly compensated when he is restored to his proper place in the community.

In the absence of any direct prohibition in

the law, we should go the limit in cure and rehabilitation. In Massachusetts, in the absence of such a law, giving the Accident Board power, we have endeavored to build up, through a system of impartial examinations and by a study of hospital results in cases which come before the Board, a procedure which led first to examinations of cases by experts in the particular thing which the man claimed as his disability, and secondarily to treatment. It would manifestly be a joke to refer an arthritic spine or an obscure back injury to a general practitioner whose treatment consists of sympathy and liniments. Our impartial examiners examined on the basis of not only was the man still disabled when the case arrived, but had the case been properly treated before it arrived, had it been properly diagnosed before it arrived, and if still disabled, could it be cured. The proof of the pudding was the eating, and our men, our impartial examiners, began to make good on what they said could and should be done, and the insurance companies gladly stood for it.

With the increasing payments for medical and hospital expenses and compensation, the agents of some insurance companies are prone to seize upon some helpful point in diagnosis or treatment to "blackhand" an injured employee with a legitimate claim. Because a man is suffering from an ununited fracture received in his employment, and a Wassermann is suggested, which may even be positive, that should not be a reason for intimidation, or worse—misrepresentation as to his rights.

The objection to impartials being paid by the insurance companies for the treatment of cases, under an agreement between all parties at a conference, is to my mind overbalanced by the positive good that comes from the rehabilitation of the man and his restoration to his place as a productive member of the community.

The various forms under which the Compensation Act is administered make it necessary for you to take the principles and apply them as best you can in the various places. The medical profession as a whole did not in the beginning grasp the importance of the movement which was instituted. Men here and there picked out the essence of the law and endeavored to put it into effect.

Medical competence:—can it be obtained through a free choice of physicians or can it be obtained under competent specialists' work?

In accident work you heard the results of Dr. Clark this afternoon. If we had enough Dr. Clarks to go around, the problem would be solved, but we must take and we must utilize the instruments and institutions we have in hand because there is not enough money or enough time to furnish immediately what we actually need. The older men do not make the effort to grasp the salient points that are necessary in the treatment and rehabilitation of the workman or in the settlement of his claim. The work of the middle group—the family doctor, so called—who meet their patients face to face, is limited, but they can do most of the ordinary accident work if you consider that of the number of cases with which we have to deal, the trivial are the great percentage of cases. There should be some direct method by which the general man, who is a good, honest, conscientious man, could be supplied with the things he needs to remedy his deficiency. In other words, there should be trained consultants available under some form of administration, and there should be institutions for diagnosis and for checking up results. Those are essential with that type of man, and perhaps, with all men.

Shall we duplicate hospitals by having the insurance company or employers of labor again taxed for other institutions?

As has been pointed out by Dr. Codman, there is already in Massachusetts two hundred million dollars invested in plants for the purpose of cure. In addition to this investment, there is thirty odd millions a year appropriated or given for the treatment of the sick. Is that two hundred million properly handled? Is that thirty or thirty-six millions properly expended? Who knows; and is there any way to check it up before we duplicate these institutions, and spend another twenty or thirty million in trying to arrive at perfection?

Again this leads to the interesting question, should charitable funds be used for industrial workers, who carry insurance supposed to pay for medical treatment and care?

The small hospital, of course, has lack of equipment. It has a narrow staff, as a rule. They don't let anybody in and they resist anybody with an idea.

We had a case in the Accident Board, in which a man had been treated in a hospital and, in general, the diagnosis was made that he had an operative condition in connection with a Charcot joint. I sent an impartial examiner

to Fall River to see the man, and our impartial examiner said that the man could be remedied by a brace of a simple character applied to the leg, and that it was not a "Charcot." The impartial examiner was called upon to make good; he made a brace, and the man was relieved largely of his symptoms and got about on his feet, but the day after the hearing at which that was determined, the social service worker of that hospital went to the man and said that he must come in for an operation or he could not come to the hospital at all for any purpose; and that was a hospital that was supplied by the insurance company. Here was a case in which competent medical authority decided he could be cured, the Board said he could be cured, and the hospital said, "You must be operated or you don't get any treatment of any kind."

Small hospitals and general hospitals also have a disadvantage in that the men who have been treated by private practitioners, who are obliged to go into the hospital, are given not only the once over, but the once, twice and three times over. Whatever has been done for them, to the mind of the interne, has been wrong, and between what the man was told by his attending physician and by what is known as the "pup" in the hospital, his mind is somewhat upset, and he doesn't know whether he is going or coming for treatment.

Shall we permit, or have we got to permit that, and for how long? Injured workmen do fall down between the general practitioner and the hospital which will not give us adequate treatment.

Then there are a few large hospitals, and in this State they are good. They will be better and will do better work as times goes on—when the workman is taken into confidence more, and explanations made to him of the whys and wherefores of the treatment; and when he is urged to go back to work he will feel that he is not being urged to go back to work from a selfish standpoint, without regard to his own physical welfare. Dr. Clark has suggested that men go back to work, but under medical supervision; that a man should be provided to whom the injured man may turn with his trials and tribulations, who will explain to him the meaning of the things that may happen to him after he returns; display a little human interest, and if the company hospitals do that, as they do in Worcester and in Lynn, and as they do in some measure in Boston, the old feeling that the employer is an enemy of the workman, will disappear, and coöperation will result.

A study of hospital results showed that hospitals are distinctly undermanned in practically every instance. In one of the largest hospitals in the Commonwealth, through the action of the Board by pressure, but without law, that hospital reduced the number of beds to each visiting surgeon from ninety-two to fifty, and fifty beds to a man giving part time is altogether too many, in my opinion, even today The people who know most about hospitals have very little to say about them. The person who should know most about hospital needs and the efficiency of the hospital is the doctor, and the doctor is seldom a member of the trustees, and if he is a member, he is very often more concerned with other things than hospital efficiency.

In the program today, you were given a visit to the Massachusetts General Hospital, one of our largest and oldest institutions. You saw many things there. You saw a great plant. There is little in that famous Zander room, so impressive to you and me, which cannot be duplicated for small cost. The principle involved in every one of those motions can be made with a discarded bicycle, an old ladder, a few strips of plaster, a wheel tied onto the wall, an old rocking horse, etc., if you have somebody to put brains into it. The finest institution is not a substitute for medical competence, and you people who come from places where it is difficult to get these expensive equipments need not be discouraged, because these can be duplicated at very small cost,—almost no cost. The blacksmith shop, which you seldom think of in connection with a hospital, is a rare thing in a hospital, and most doctors who prescribe braces and mechanical things seldom take the trouble to go into the blacksmith shop, and very often they do not know if these appliances are properly made, but kick if a brace is inefficient. You further saw the place where the orthopedic men went into the blacksmith shop brace-making department and learned how to fit braces.

The low-back question is one which everybody has difficulty with, and the question arose this afternoon about a heart case. The question often arises about a back case, and sometimes it is difficult to decide whether a condition is an accident or an injury. Massachusetts has a personal injury law, and that personal injury law

means any injury which arises out of the employment. It has been construed liberally, and an "old back," especially when an employee has arthritis or old-fashioned rheumatism, that back when it is strained—and it may be strained by a very trivial happening—is an extremely difficult thing to cure unless adequate medical attention is given. Most of these cases, in my experience, except with some people from warm climates, during cold months, can be cured at a very much less cost than the cost of a hearing before the Accident Board, by braces and supportive measures, bearing in mind the patient's food, régime, and method of living. Here must be taught the need for selecting the kinds of foods and the elimination of food in addition to local measures. The time may come when in industrial centers hospitals will be provided for technical industrial cases. I do not believe that this is necessary today. I believe that the thing that is more necessary, as indicated this afternoon, and which I indicated last year at Columbus, is that it would be a time and money-saving thing if a man with a low compensation rate, with a family depending upon him, should be taken out and put on an industrial farm and allowed to work out his troubles to a greater degree of comfort, rather than to have the insurance company pay him money indefinitely, surrounded by conditions that obtain in certain parts of our great cities.

The next thing that I have in mind on the question of hospital efficiency is the rehabilitation of workmen, which has taken on a new significance. If we had a proper system in this country of workmen's compensation administration in all the States there would not now be the feverish effort to provide reconstruction hospitals for the wounded that are to come. Dr. Patterson this afternoon told that we had just as many wounded every day in the United States as will probably be in Europe, and we have no adequate centralized system of taking care of these men. The Massachusetts Legislature authorized investigation of how to rehabilitate the injured workmen, and it was turned over to the State Board of Education. They reported a bill to the Legislature calling for $15,000 for social service workers, but no doctor and no nurse. I think that speaks for itself.

I was in California last week and I called on Mr. Pillsbury the chairman of the California Commission, who started right by being born in New Hampshire, and he told me that in California they found there were hospitals and hospitals, and he at the last Legislature indicated a few of his ideas along this line, working for a change in the law. "There have been hospitals that were hospitals in name only, but in fact were mere bunk houses, rough and insanitary and inconvenient, and with a medical staff that consisted either of some youth who had just got his 'shingle' or some old broken-down practitioner who had not gotten anywhere. With the hope of putting an end to this condition, the Legislature, in Section 10 of the new Act, gave the Commission power to inspect and determine the adequacy of hospitals and hospital facilities supplied by employers, or by mutual associations of employees for the treatment of injuries coming within the provisions of the Act. Every hospital supplied by employers or mutual associations of employees must make reports from time to time to the Commission, on demand, giving account of their receipts and disbursements and services rendered to or for employees, and if, in the judgment of the Commission, the service or equipment of any such hospital is inadequate to meet the reasonable requirements of medical treatment contemplated by the Act, the Commission may, after notice and an opportunity to be heard, declare such facilities to be inadequate, and thereafter injured employees of such employer may procure treatment elsewhere, and the reasonable cost thereof shall be a charge against such employer; but if, after finding by the Commission of a condition of inadequacy, the institution shall be put in adequate condition with an adequate medical staff, the former finding may be modified or rescinded and the hospital be reinstated in good standing.

"It is worthy of noting that no part of any contribution paid by the employees or deducted from their wages for the maintenance of such hospital facilities shall be devoted to the payment of any portion of the cost of providing compensation prescribed by the Act. It will be lawful to assess employees for sick benefits, but the employer must himself contribute enough to the fund, at least, to pay for the care of all those who are injured in his service."

That is the law of California. That ought to be the law in every State; and if, as Dr. Brickley indicated in caisson workers, we struck before the effect, everywhere the number and causes of accidents would have to be reduced.

I want to say just one word before I point out

a few concrete cases. I think we should not encourage the establishment of reconstruction hospitals except in connection with some already organized institution. We have poor hospitals enough. We have undermanned hospitals enough. We have hospitals with inadequate facilities for treatment. The money that is expended for war work, if expended judiciously, and if the ground has been properly broken by the accident boards, can be expended to greater advantage along the line of perfecting the institutions we already have by providing them with proper equipment under conditions of war or peace. We have power plants, administrative buildings, wards, out-patient departments. Have you an orthopedic department in your hospital? Have you a blacksmith shop? Isn't it cheaper to pay for the establishment of an orthopedic department and a blacksmith shop than it is to go out and build a new building with underground connections?

The freedom of choice should not take in all the paths that were indicated today by Dr. Patterson. It should indicate only the path of righteousness, and accident work must be carried out by men who have something else in mind than what is in it financially. The men in Massachusetts appreciate that they owe a duty greater than the money. They have accepted reductions in fees and the hospitals have contributed their services at less than cost, to the end that the whole community might benefit from their result, because the lesson of medical efficiency that can be carried out under the Act with the opportunity to measure the time that it takes to cure will have a determining influence upon any form of social and health legislation that is to come. Until the compensation law is properly oriented, until the hospital units are properly systematized and organized, it is folly to think of the duplication of effort and utilization of millions of dollars more in health insurance without standardization. We have the way now, we have the machinery, and we know what ought to be done. The advocates of health insurance, which is bound to come in time, and ought to come in time, at this stage should work for standardizing of hospitals, the measuring of their output—not in the cost per day of milk, vegetables, and dressings, but on how many days it takes to put a man back to work.

(Dr. Donoghue then showed some slides.)

Original Articles.

RADIUM IN THE TREATMENT OF CARCINOMA OF THE BUCCAL CAVITY.*

BY ROBERT B. GREENOUGH, M.D., BOSTON.

[From the Cancer Commission of Harvard University.]

THE employment of radium in the treatment of cancer followed shortly after the discovery and description of the element by the Curies. The x-rays had already been used with more or less success in the treatment of disease of various kinds, including malignant disease, and the world was quick to appreciate the advantages of a source of radioactivity so compact and so continuous in its action as the radium salts. For weak superficial application the radium salts themselves are used, spread thin on a piece of metal and fixed with varnish. Applicators of this character, valued at from $500 to $2500, are in use in many clinics for treatment of superficial skin lesions, but are of little value in cases of carcinoma of the deeper tissues. For more powerful dosage the gaseous emanation which is constantly given off from the radium salts is used in preference to the salt itself.

Radium element is constantly undergoing disintegration, or decay, at a rate such that in seventeen hundred years a given amount of radium will be reduced one-half in quantity. This disintegration is accompanied by a discharge of particles from the atoms of radium which change their character in such a way that several different disintegration products can be recognized. Thus the first change is from radium element to radium emanation—a gaseous product which again changes rapidly to radium A, radium A to radium B, etc. The penetrating rays which are given off come from the disintegration products radium A, B and C, rather than from the radium itself or from its emanation, but as radium A, B and C are being constantly produced by the radium and are being deposited upon the tube or vessel containing the element, the radioactivity of a given quantity of radium remains almost, but not quite, a constant amount, the newly-formed deposited disintegration products nearly replacing the ones which are destroyed. The gaseous emanation, however, when removed from its source of supply, undergoes very rapid decay into radium A, B and C, and in four days is reduced about one-half in substance and in

* Read at a meeting of the Harriet Newell Lowell Society for Dental Research, November, 1917.

radioactivity. The life of radium A, B and C is even shorter, and the final result of this disintegration is an element similar to lead, and devoid of further radioactive function.

From the disintegration products, radium A, B and C, rays are given off of three different kinds: α, β and γ rays. The α and β rays are readily absorbed by tissues, and thus have little penetration, but a good deal of caustic effect. It is the β rays, especially, which are used in the weak radium applicators used for treatment of superficial skin diseases, such as keratoses, and the early and superficial cancer of the skin. The γ rays of radium are even more penetrating than the x-rays, and it is these rays which are used for deeper and more powerful applications. The γ rays are less abundant than the α and β rays, but their effects can be obtained by the employment of large amounts of radium or of emanation which has been screened by lead or platinum to cut off the α and β rays and permit only the γ rays to reach the tissues.

At the Huntington Hospital radium is used in the form of emanation or gas. This gas is derived from the one thousand milligrams of radium which have been acquired by the Cancer Commission of Harvard University. Every day the emanation which has accumulated is drawn off and purified by a method devised by Professor Duane, and sealed in capillary glass tubes for use in the hospital. These tubes of emanation deteriorate and lose half of their strength every four days, but new ones are supplied every day, so that the amount available for treatment is practically constant. With these small capillary tubes an applicator can be prepared of any desired shape or size to produce the desired effect upon the tissues to be treated.

The effect of radium rays upon tissue is one of a peculiar nature, and not yet thoroughly understood. In general, however, it may be compared to a cauterizing agent. If the dose is strong, immediate effects are noticed, but if it is weaker, the effect may be much delayed. No pain is experienced at the time of the application, but the subsequent necrosis of tissue may be accompanied by marked hyperemia and swelling of the surrounding tissues, and a painful lesion result which is very slow to heal.

It is believed by many observers that a selective action is present in radium rays, such that tumor tissue is affected unfavorably in its growth by doses which do not produce material effects upon the normal surrounding tissues. This is certainly true in some particular forms of tumor tissue, if not in all, and has been attributed to the low vitality and consequent predisposition to necrosis which tumor cells have long been recognized to possess. Other observers attribute the beneficial effects of radiotherapy upon tumor tissue to the stimulation of the surrounding connective tissue, and the resulting fibrous tissue formation which diminishes the blood supply to the tumor and tends to encapsulate it and prevent its further extension. There is reason to believe that the body tissues of themselves exhibit some such reaction as this, as a response to the stimulus of the presence of the abnormal tumor tissue, and it is not impossible that this normal reaction may be increased by radium. Whatever the process by which it is accomplished as a result of exposure to radioactivity, tumor tissue undergoes changes which may extend to the complete, and, so far as we have been able to observe, the permanent disappearance of the tumor tissue. This is, of course, the object desired in the treatment of tumors by radium. It does not occur in every case. Some kinds of tumor are far more susceptible to radium treatment than others. In general, the milder and more superficial lesions are the ones which respond most readily, such as the senile keratoses, papillomata, and other of the so-called precancerous conditions. Superficial skin cancer also is frequently amenable to successful treatment with radium, while the deeper and more serious forms of cancer are more refractory. Some of the tumors of lymphatic origin are also notably responsive to radium treatment, although the results in such cases are less lasting, and recurrence of the growth is not uncommon.

Carcinoma in and about the mouth is one of the most common and distressing forms of malignant disease, and one in which operation has yielded relatively poor results in the way of radical cure. This may be attributed partly to the technical difficulties involved in the radical removal in one piece of the primary tumor and the adjacent lymphatics, partly to the mortality which attends extensive operations in this region, and partly, as in so many other forms of cancer, to the difficulty of early positive diagnosis of the disease. Under these conditions it was hoped that radium might offer a notable improvement in the treatment of these cases. This has proved to be true only to a very limited

extent, and in suitable cases radical operation still remains the most effective treatment. It is true, of course, that the prognosis varies with the situation of the tumor, and that cancer of the lip is far more favorable for radical operation than cancer of the tongue or palate. It is also true that the size of the original lesion and its rapidity of dissemination vary in different individuals, so that generalizations in regard to cancer of any organ are open to criticism, yet, in the long run, the cases of mouth cancer form one of the most discouraging groups of cases with which the surgeon has to deal.

In the twenty-eight months from April, 1912, to January, 1916, one hundred and thirty-nine cases of mouth cancer presented themselves at the Huntington Hospital. They were divided as follows:

CARCINOMA OF THE TONGUE, MOUTH, ETC.

Lip	39	(Radium 19—Improvement 8)
Palate	8	
Lower Jaw	36	
Upper Jaw	11	
Tongue and Floor of Mouth	33	(Radium 62—Improvement 9)
Tonsil	7	
Cheek (Buccal)	5	
TOTAL	139	

It is only fair to say that at the Huntington Hospital the radical operative treatment of cancer is the treatment which is advised and practised in cases in which there is a reasonable prospect of success, and radium or other palliative treatment is advised or employed only in cases which for one reason or another are not suitable for operation. Thus of the thirty-nine cases of cancer of the lip, nine were considered suitable for operation; six were operated upon at the Huntington or other hospitals, with subsequent freedom from recurrence; in two the results were unknown, and in one case operation failed to cure. Eleven cases received no treatment, and nineteen were given radium treatment. Of the nineteen cases treated by radium, four showed improvement, and four were apparently relieved of their disease, in that their tumors disappeared and no recurrence has yet made its appearance. The other eleven obtained but little benefit—these being chiefly cases in which extension to the cervical lymph glands had taken place. Squamous cell carcinoma in the lymph glands of the neck is very refractory to radium treatment, and with our present methods of treatment we can give but little hope that the progress of the disease will be materially delayed when this extension has occurred.

Eight cases of cancer of the palate, seven cases of cancer of the tonsil, and five cases of cancer of buccal mucosa were observed during this period—twenty cases in all, of which twelve had one or more radium treatments. No case showed anything more than temporary and symptomatic benefit, and the disease progressed with little or no delay toward a fatal termination. It is doubtful if radium was of material benefit in any of these cases, but in view of the fact that they offer a problem little different from that of cancer of the tongue or jaw, it is possible that larger dosage, and more aggressive radium treatment may give results in other cases, which have not been obtainable with the amount of radium available during the period covered by this report.

There were thirty-six cases of cancer of the lower jaw, and eleven cases of cancer of the antrum and upper jaw, in this series of cases. Twenty-eight of the forty-seven cases had one or more radium treatments. The upper jaw cases were all refractory, and the disease was not materially influenced by radium. Six of the lower jaw cases had definite benefit from radium, however, and in one case, a local recurrence after operation, the disease was destroyed and no further recurrence has appeared in twenty months.

There were thirty-three cases of cancer of the tongue and floor of mouth; of these one was suitable for operation and there has been no recurrence in two and a half years. Twenty-two were given radium treatment, and in three definite improvement took place, although the disease was not eradicated. In these cases as in all cases of cancer of the mouth, the extension to the cervical lymphatics determines the limit of effective treatment by radium. The local lesion can be destroyed, or at least materially retarded in its growth, by active radium treatment in many cases, but when extension to the neck takes place the heavy treatments which can be used on the open ulcerated lesion in the mouth cannot be applied over the neck for fear of destruction of the skin, and its attendant complications, such as secondary hemorrhage. In cases of this character we have lately employed a combined treatment by radium and by operation. The neck dissection is done, as for a radical operation for cancer, and with the lym-

phaties removed and a barrier of scar tissue in their place to limit the spread of the disease, active and caustic radium treatment is applied to the local lesion in the mouth. By this method it is hoped that some cases otherwise hopeless may be given benefit, and although it is too early to report results the indications are definite that this method is one of promise for the future.

Leukoplakia-Buccalis. Eight cases of this disease occurred in this series of cases, and four were treated by radium with a certain amount of success. It is unquestionable that radium employed in sufficient strength can cause the disappearance of the milky mucosa, but only by an actual caustic action. The tissue must be burned, and as the burn is extremely sensitive the cure is attended by great discomfort, out of proportion to the severity of the disease. It is our opinion that radium treatment in leukoplakia should be reserved for the more definitely thickened and indurated areas which give indication of existing or prospective malignant transformation, and that the soft, non-infiltrated lesions can best be treated by other methods, such as fulguration.

Before closing I feel that it would be a serious neglect if I did not speak before this audience of the vital importance of early diagnosis of these lesions. The dentist far more frequently than the physician has the opportunity to observe the early changes of the buccal mucous membranes which may later develop into malignant disease.

We all admit that we do not pretend to know the actual cause of cancer, and in many organs and situations we do not even recognize any predisposing cause, or any preëxistent lesion which commonly precedes the development of cancer itself. In some parts of the body, however, there are predisposing or "precancerous" lesions, as they are called, which are so constantly, or in such large proportion, the forerunners of cancer that we can only believe that some obscure but actual causal relation exists. I refer to the lesions produced by one or another form of chronic irritation. Instances of the rôle played by chronic irritation in the incidence of cancer are all too frequent. Perhaps the Kangri cancer of Kashmir is the most striking of many examples. In this case a source of irritation unknown in other countries is provided by the custom of the natives of Kashmir of maintaining the warmth of their bodies by a small flat stove, heated with charcoal, which they wrap in their clothing and place upon the skin of the abdominal wall. In other parts of the world the skin of the abdominal wall is practically an unknown situation for cancer to arise, but in Kashmir, as a result of this practice, cancer of this region is a common disease. The so-called smoker's cancer of the lip, thought to be due to the irritation of the hot pipe stem, is another example, and the occurrence of the disease in men about six times more frequently than in women appears to justify this hypothetical relation.

In the mouth sources of chronic irritation are all too frequent: pyorrhea, ill-fitting toothplates or jagged teeth, which wound and keep irritated the surface of the cheek, or of the tongue, are familiar examples that arise in dental practice. Many believe, also, that tobacco is a common source of irritation to the buccal mucosa, either by chemical irritation or from the heat engendered by its consumption in smoking. Leukoplakia, that extraordinary form of chronic productive inflammation of the buccal mucous membranes, is again a well-recognized point of origin of cancer of the mouth. Further examples are hardly needed to justify the statement that it is the duty of the physician or the dentist who discovers any one of the possible "precancerous" conditions, to warn the patient of the grave possibilities of his condition, and to procure for him appropriate treatment that the lesion may be cured before the more serious disease has actually begun.

In most cases the exact time at which a lesion, such as an ulcer, a fissure, or a patch of leukoplakia *begins* to be carcinoma is impossible to define. We see many doubtful but suspicious cases, and the proper treatment of such cases offers one of the most difficult problems with which we have to deal.

The best opinion of the present day is opposed to the exploratory excision of fragments of tissue for early cancer diagnosis, on the ground that cutting into cancer tissue tends to spread the disease. This is certainly true in such forms of internal cancer as cancer of the breast; and under all circumstances it should be avoided if possible, and if any tissue is to be excised for diagnosis the whole of the lesion should be removed. As a rule, however, the diagnosis can be made by other methods, and incision can be avoided.

The existence of an open ulceration in the

mouth of more than two weeks' duration, and especially if it possesses an indurated margin, raises the question of cancer. Syphilis, tuberculosis, and some rarer lesions are ordinarily to be considered in diagnosis, as well as the "precancerous" fissures, dental ulcers, and leukoplakia. If syphilis, we do not now wait for the therapeutic test, but we get a Wassermann test. Again, with syphilis, one must remember that the presence of syphilis does not exclude cancer. In fact, it favors the diagnosis of cancer, for syphilis is one of the most common antecedent facts in the history of cancer of the mouth.

Tuberculosis of the tongue and mouth is almost invariably secondary to tuberculosis elsewhere, and is also a late rather than an early manifestation of the disease.

The ulcer due to a jagged tooth or to an ill-fitting plate depends for its recognition upon the presence of such a tooth or plate. When one of the "precancerous" lesions is present and there is doubt as to whether cancer has already begun, excision of the lesion by a good margin is the procedure to be advised. Such a specimen may be examined immediately in frozen sections, by a pathologist, and if the report is positive that cancer is present, the radical operation for cancer of that situation should be done at the same sitting, and under one anesthesia.

The radical operations for cancer of the tongue, jaw and palate are serious and mutilating operations. Cures result in some of the early and favorable cases, but the best treatment will always be the prophylactic treatment which removes the causes and the results of chronic irritation before the change to malignancy has taken place. By the prophylactic treatment of these "precancerous" conditions the dentist has the opportunity to be of great service to his fellow men in preventing, or procuring early treatment for these most serious forms of malignant disease.

A STUDY OF DIPHTHERIA CARRIERS.

BY D. M. LEWIS, M.D., NEW HAVEN, CONN.,

Epidemiologist, Board of Health.

THERE are two factors which should make this subject timely: first, the unappreciated known fact that measles is followed by diphtheria; secondly, that a so-called experiment based on certain knowledge of the first factor has given rational results as well as demonstrating what should be the simplicity of control of the disease.

Having shown results from consideration of the first factor,[1] namely, lessened cases and deaths than the surrounding cities under similar conditions, during the first half of the year 1917, I was much concerned to find the months of October and November producing an increasing wave of reported cases over the previous fall. I was also impressed with the frequency of demonstrable carriers, neighborhood as well as house, in connection with the reported cases. In that I have shown that active carriers in the larger per cent. are nasal, and can be picked out definitely from ordinary head colds, I obtained the services of two trained nurses to round up every available carrier. There were two essential points: first, to make a complete survey of all of school age; and, secondly, those not of school age in neighborhoods where there had been cases but no demonstrable carrier in the house. Having picked the two nurses after a practical examination as to what could be seen by the eyes with reference to three children, one a true carrier, one an ordinary head cold, and the third a normal individual, I showed them how to take a nasal culture and set them to work. School days they went through all the grammar school grades and on Saturdays through house-to-house neighborhoods, paying attention only to noses and only to apparently definite or suspicious diphtheria noses. I have shown previously the similarity of the streptococcus nose to diphtheria, and the need for isolating these; so that, while I killed two birds with one stone, this study is based on true diphtheria. While I have no exact figures, it was estimated that approximately 35,000 children were seen by these two nurses during the two months. The important point was that there were 687 cultures taken by them. There were a few scattering instances where the diagnosis was certain, and either the child refused to allow the procedure, or where, for conserving time, the culture was taken later by me on isolating the individual. The net result was 34 nasal carriers of school age, to which there were added 23 others of school age, found either by the school nurses, physicians or teachers, or by the department in our work. Approximately .2% of our school population were carriers then, if we had all accounted for. Of 12 other

demonstrated carriers found during this period, 2 were in adults and the remainder in children not of school age. There was insufficient time to more than scratch the surface of the neighborhood survey, so that any comparison with those of school age is lacking. Having previously shown the predominant age, that of ages 5 to 15, I was assured that the larger portion of the problem was solved. The other months of 1917 had yielded me 47 carriers.

Grouped by ages and sex, these 116 carriers were as follows: 12% males under age 5, with 13% females; 30 and 33%, respectively, under age 10; 5% each under age 20; while over age 20 there were 2% females.

Of these carriers, 14% were found in connection with a reported case. Of such carriers, 15% were found in the family, 20% each in other families in the house or immediate neighborhood, while 45% were non-residents, temporarily residing here but bringing their lesions with them.

Five per cent. of the total number either gave the history of, or were known previous cases of, the disease. Half of that per cent. had had cases of the disease in the family during previous years, although the carrier had not had it. A very characteristic case of such has been related in another paper.[2]

In 3 instances the carrier was one of a family living in the rear of the grocery store run by the parents. Similar contact with dry goods was shown by 2 instances. The latter number was also found with reference to rooming-houses.

In isolated instances it was possible to show that in 4 instances one carrier had made one other nasal carrier; in 8 instances one carrier had made 2 other carriers, and in a like number 1 carrier had made 3 further carriers. The multiple instances were frequent in families and explains, as I have shown, the immunity of certain families.

In 4 instances the carrier was a recent case of measles, 2 were known previous streptococcal grippes, and 1 was a convalescent whooping cough. There were 6 instances where the history was that of a similar recurring discharge or they were carried on my index as a previous carrier. The balance gave either no dependable history or merely that the onset was an ordinary head cold. In 2 instances a most remarkable finding was the following: consecutive anterior nasal cultures showed a pure streptococcus for upwards of one week, to be replaced by predominating K-L or pure cultures in one case. The other case was the reverse. There was neither time relation nor neighborhood factors in common.

In 15 instances there was patency of the nares and the discharge, as well as accompanying irritation cleared within one week after the treatment began. As contrasted with this 14% mentioned, 39% were clear only after 2 weeks, 35% under 4 weeks, while 12% lasted six weeks or over. In all cases when patency of the nares was obtained and the swab could be passed into the posterior nares, the process cleared rapidly. I have shown in another article[3] why such obstinate carriers are possible.

In no instance of this series, as in no instance of several hundred such carriers that I have observed, has any carrier developed the disease. In 2 instances only, have young physicians, fearful from perhaps both lack of experience as well as the visual picture of the condition, given antitoxin. Primary anterior nasal, so-called diphtheria, is not a disease. That the carrier so made by inoculation and one who has never had the disease, may absorb some toxin is apparent in some babies. In this series there were 2 under age 1. Both are of sufficient interest to record.

CASE 1. Baby B., aged 6 months. A culture from the father walking into a physician's office showed K-L. As the patient was cultured from routine only, and not from clinical aspects, and was working in a large factory, I made a visit to his residence and found the following: With his wife and the baby mentioned, he had removed the week previously from a larger city. The baby had a very typical unilateral excoriating nasal discharge which, the mother stated, had been present some few weeks. Not really ill, the baby had not had medical attention. The throat was normal and, other than an apparent moderate anemia, there was no evidence of toxin absorption. The mother stated that at first there had been times when she thought the baby was a little feverish. With the institution of routine treatment there was a complete cure at the end of ten days, with a return of improved color of mucous membranes, which the mother noted as well. Neither parent had previously had the disease to their knowledge, although it is possible that the father, who at this time did not have clinical diphtheria, had had the

same previously, and since had recurring follicular types, of which the present attack was one, and that he had previously infected the baby.

CASE 2. Baby F., age 1. An older sister, age 7, had been found in the school a nasal carrier. Family included also a boy age 4. The latter was manifestly from the lesion the oldest carrier, the girl and baby being recent ones. At the time and during the month that it took to cure the baby there were no signs of toxin absorption in the baby.

Proof that such nasal carriers acquired their immunity during the process could be obtained only by Schick reactions previous to and following such carriage. This, in my experience, is the only value of the procedure and is as impractical as are the other fields of its use as compared to the clinical knowledge learned at first hand in the field.

One of the most interesting features is the infectiousness of the carrier. Not having sufficient assistance to painstakingly trace each carrier, and that one's relation to preceding or future carriers, with relation to cases, makes the matter one of practical inference of repetition of instances rather than actual statistics. There is good clinical evidence that the recurring chronics are less case-infectious than the acute carriers made by that carrier. It was the rule to find the second or third carrier before there was any reported or found cases, and the latter were more closely connected with the recent carrier as to being playmates. While we generally see such a sequence there is rarely to be found the possibility that primary faucial diphtheria makes nasal carriers. Of this series there were two such. One is the father of Case 1, and the other is related at length as being in the same category as the infected articles stored for years in a house which finally give rise to a case on being handled.

CASE 3. While caring for two younger children with German measles, Mrs. C. had an ordinary follicular tonsillitis. One week later the boy, age 9, now ready for discharge from measles, had a nasal discharge, and would have been seen by me but for the fact that his sister, age 6, was coming down with the measles and the placard remained on the house. Two weeks later, when called upon because the latter case was convalescent, I was told by the mother that the girl had just developed a sore throat which had just been cultured as suspicious of diphtheria. Examination of the mother and older girl in the family showed nothing, while the boy showed a unilateral atypical discharge. Cultures showed K-L in both the nares of the boy and the throat of the girl. The following day I obtained the history given of the mother, as well as the fact that during the preceding month the boy had had contact outside the house with but one boy, and that one after the discharge began. Further inquiry revealed the fact that 16 years previously the mother had lost one child with diphtheria. Cultures from the older sister and the father, as well as the boy acquaintance mentioned, were negative. That from the mother, who showed no inflammatory reaction of the throat, showed a few very suspicious organisms. While an almost unbelievable period for holding an organism in the tonsil, the following facts warrant consideration: a total absence of sore throats during the 16 years; that the girl's faucial diphtheria followed two weeks after the development of the boy's nasal discharge rather than at the beginning of that time, and coincident with the onset of the attack of her measles; lastly, total absence of carriers or cases of the disease, previously during one and one-half years and three months since, in that neighborhood. Practically, the case is related as a similar analogy also to the possibility of reinfection of urethritis, which is admitted up to 10 years, but raises a laugh after that time. In other words, there is need to absolutely disprove nasal delivery boys, etc., as not having infected the boy's nose, proving the rule rather than the exception. This rule is strengthened by the fact that I have had absolutely no recurrent cases and no secondary cases of the disease during 1917, and but one recurrent case in 1916, when the isolation hospital returned a case, a visible nasal carrier, though a reported double negative culture. Such also happened the preceding year and once the present year.

Treatment of the carriage is of the utmost importance, since literature abounds with so varied measures. The latter all depend, unfortunately, on the demonstration of the carriage as manifested by the organism without regard to the local conditions. I am on record as to carriers showing a pathological picture (Case 3 even as merely suspected corresponds), and would show that the duration of the carriage

under treatment is in accord. Personally, being an unproven though suspected case of nasal diphtheria after a service in the South Department of the Boston City Hospital, able on occasions to discharge false membrane from my left nares for a period of months, I found relief only through the continuous use of gum camphor, as advised by Dr. Leland. On the basis that with increased resistance the recurrence of acute attacks would be diminished, both in frequence and intensity, I continued its use and did not have a septal operation for the pre-existing deformity, at that time markedly increased, as advised by others. From 1901 until 1903 such treatment continued to ease numerous acute recurrent attacks. From that time, with a knowledge of the use of eucalyptol, I used a 1% solution of both ingredients in mineral oil with even better results. For the past ten years I have had an absence of acute attacks, even with possibly an unusual number of so-called head colds. From my appreciation of my first year's study of diphtheria in 1914, in its relation to my personal case, I have used the solution constantly in nasal carriers in the following manner: constant inhalation by means of dropper, nasal swab or atomizer every one hour in a 1% solution for all individuals over age 5. As frequently irritant in younger individuals, a one-half per cent. solution gives the same results. Its therapeutic use is added cause for commendation as against using first a watery antiseptic and later an oil protective, in performing a simple operation that can be done by any mother or an older child easily. I have personally tested out the hypochlorites followed by oil, and cannot demonstrate any advantage. I would point out that its use is hourly for days and weeks as contrasted with the present-day literature of failure with such antisepsis when used once or twice a day, or with other gases when exposure is for a stated exposure once daily. Incidentally there may be seen the same good results in all nasal carriers of streptococci and pneumococci. For two years I have replaced formalin fumigation with nasal disinfection with this solution and have an accurate knowledge that the hundreds of ounce bottles that I have left with any variety of respiratory carriers has been of great aid in present disinfection and in future prevention. The secret at the basis is to saw away at the partial or complete blocking of the anterior nares until a passage is obtained. When obtained, it is the rule to obtain negative cultures repeatedly, as well as to have the local irritation signs clear up, clinically giving knowledge as well, that the cure is complete. I say complete— it is not appreciated that at some future time the individual may again present an acute picture found in connection with reported cases in the neighborhood or found, as in two instances, by the survey of the school as known carriers the previous season.

Importance of Carriers. I have shown that secondary and return cases are absolutely dependent on family carriers. It is possible to assert with a marked degree of confidence that neighborhood secondary cases are dependent upon the extra-family or extra-house carrier. When such a condition exists, and from the frequency of such with reference to a reported case which has been shown, there continue neighborhood cases until that one is found. I know of no unknown problem or mystery of infection that is not explained by an eventually demonstrated carrier. When the majority or all in the neighborhood are found, one understands why each and every present-day procedure of protecting others, whether in terms of milk bottles, clothes and individuals, fails unless you have locked up in that house the carrier. Boards of health should be liable for every carrier. To aid in finding him, medical detectives must have as effective a system as the police for rounding up burglars before they do damage or, having done damage to catch him. If, then, every bar of the present-day procedures is thrown down and placards as well as restrictions placed against the carrier, we can safely permit, as we do here, conduction of even raw food business, can make home treatment possible under any condition, and, finally, can teach the public to fear a very definite visible condition in the well individual, rather than that inside a placarded house of a case—the condition is similar to the summer open garbage can and its million flies. It makes possible personal liberty; it restores the rights of the public. It is humiliating to a sanitarian that the victim dead of the disease must be placed in a hermetically-sealed coffin, must have a private funeral, while the cause of that illness is outside among the crowd of playmates, friends, and the morbid curious who otherwise would not be there, and this one again exposing others to infection. If the carrier who made the one ill had not been previously found it should be a part of the health authorities' responsibility to invite a

public funeral in order to then find among the dead's intimates the carrier. It is not infrequent that the exposure was at a party where other neighborhood, and even other community children were present, and it has been impossible to reach all such children. The field work must be extended to safe milk, along the present-day lines of safe water and typhoid. Clean up and keep cleaned up, the farms and dairies in terms of individuals who may be found to be carriers. We used to grade premises to control contagious diseases; we now grade milk similarly. The future in either case is to grade the individuals.

Results. What have we to show for prevention? The last severe epidemic of measles comparable to the one of 1917 was in 1906. During that latter year there was no especial prevalence of diphtheria for the first seven months; then suddenly, without anything in common, began an outbreak. For the five remaining months there were 35 deaths, with 9 more during the next three months of 1907. During a similar period in 1917 there were 8 deaths, although I have stated early in the paper that the frequency of cases during the early part of the period was as alarming as at the start of the previous epidemic. For the first three months of 1918, there were 5 deaths, or a total of 13, as against 44. Further, we have halved the deaths of latter 1917 and early 1918, as compared to those of the year previous. Such positive results bespeak for the rationality of the continuous operation of detectives for finding carriers, when two months of such work can produce said results.

Summary. The continuous search for carriers in controlling diphtheria is an exact sanitary measure of prevention.

All individuals with acute catarrhal nasal conditions are the potential acute nasal diphtheria carriers; it requires the presence of a chronic carrier, generally also nasal in type The permanency of the former when made a carrier is dependent on the degree of nasal obstruction.

All individuals convalescent from any respiratory disease, however mild, constitute the largest proportion of nasal carriers of diphtheria. Investigation of all such individuals and their isolation, if carriers, is the essential basis of control of diphtheria.

In general, cases follow the production of acute nasal carriers by chronic ones.

Responsibility for any frequency of the disease is solely that of health authorities.

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A PLEA FOR A LEGITIMATE TRIAL OF SCIENTIFIC MEDICAL METHODS IN CHRONIC INTESTINAL CONDITIONS BEFORE RESORTING TO SURGICAL INTERFERENCE.*

BY MABEL D. ORDWAY, M.D., BOSTON.

IN view of the recent popularity of operations for removal of the cecum and a portion of the colon in conditions where there is no foreign growth and no serious constipation amounting to obstipation (in which conditions the Mayo Brothers and others believe operation necessary, while in those above mentioned they consider it culpable), for an alleged benefit that such procedures have upon idiopathic epilepsy and other conditions of nervous system irritability, it seems pertinent to offer the following case. Although not studied with the extreme scientific accuracy possible in such institutions as the Rockefeller Institute or in our own Evans Memorial for Scientific Research, the case was followed with sufficient intelligence to prove that study in such institutions is necessary if progress in medicine is desirable. Much has been said and still is to be said of the vicious circle existing between the nervous and digestive systems. There scarcely exists a neurasthenic or psychasthenic, so called, who has not had a disturbance of some part of the digestive system at some period of his disease. To break this circle is surely of importance. We all know that in a neurotic individual sudden shocks will at times cause vomiting and diarrhoea, which rest and time will readjust, and that constipation even of a severe type has been brought about, at times indirectly, by psychic disturbances. The complicated, sympathetic nervous system, with its far-reaching relations with the internal secretory system, will continue to reward us for our attention to its miracles. Of great value also are certain investigations into psychic conditions, with their

* Read before the New England Women's Medical Society, March 21, 1918.

influence through the sympathetic system upon the glandular secretions, which in turn affect physical and psychic conditions, establishing a harmful or beneficial, vicious or benign circle. However, if we are ever to work out these important relationships, we must prevent crude interruptions in the nature of unnecessary surgical interference which affect indirectly psychic, sympathetic, glandular and again psychic as well as the physical processes directly affected by needless removal of tissue. Undoubtedly, intestinal intoxication is an important pathological condition, but many careful researches are needed to prove the toxicity of the intestinal contents, its effect upon the irritability of the various tissues of the nervous system, etc.; for we must not accept, as truths, unproved conclusions.

Case. The patient is a woman 46 years old, weight 90 pounds, height 6 feet, best weight 150 pounds. Second attack of mental excitement, which has lasted 6 months. First diagnosis, manic-depressive insanity; second diagnosis, paranoid dementia precox. Digestive system: For many years previous to mental illness the patient suffered from indigestion and constipation—now for many months has been tube fed, taking chiefly eggs and milk—2-4 qts. milk, 6-12 eggs a day. The patient is much emaciated—skin and conjunctivae jaundiced appearance—tongue, heavy brown coat, sordes on teeth, no movement of bowels without enemata and at times manual extraction of feces necessary. There is a double mitral murmur of heart which is somewhat enlarged and irregular—rate from 110 to 120 for many days—yet bl. pr. 110-80, fairly constant. Diet changed to: Beef juice and whey for three days, then beef juice; eggs, 3 or 4 a day; sugar, large amounts; fruit juices. This diet, advised by a competent internist, was followed for a week. Then regular food was taken for a week—eggs, milk, and all food except fish and meat. The patient seemed to gain, and bowels acted more easily for a day or two, only to fall into the previous condition. At this point, in view of the fact that there arose a question of the mental condition being due to a chronic form of infectious exhaustive psychosis, a thorough urine, fecal and blood examination was made, with the following report:

Blood. Hemoglobin, 85%, reds, 4,360,000; white cells, 7,400 per cm. Dif. count: 200 white cells; red cells, normal appearance; polynuclears, 78%; lymphocytes, 7%; mononuclears and transitionals, 14%; eosinophiles, 1%.

Urine. July 27, 1916: Total for night, 200 cc.; for day, 650 cc.; for 24 hours, quantity, 850 cc. (diminished). The second specimen gave day quantity 725. Color high, cloudy, weakly acid reaction; sp. gr., 1021. No albumin though the urine clouds promptly on heating, due to the phosphates, but clears on addition of acetic acid. No excess of indican, although the urobilin is increased. The urea is 2½%. No sugar is present. The sediment contains an enormous number of calcium phosphate crystals, together with a few red blood corpuscles, a few leucocytes and a very few granular cells, chiefly from the renal pelvis. No casts could be discovered. This examination shows a severe, so-called, phosphaturia, with consequent mild irritation of the urinary tract.

Fecal Examination. The stool was acid in reaction; contained the fine "frog spawn" mucus from the small intestine and a few larger shreds of mucus coming from the colon, to which were attached many granular cells whose nuclei could still be discovered. The microscope showed a mass of fatty acid needles in every slide, to which the acidity of the stool could be ascribed. No other food fragments could be detected. There is, then, an intestinal catarrh, most marked in the small intestine, with marked impairment of fat absorption. This is apparently not due to any interference with the bile elimination, since none was discovered in the urine. This phosphaturia is variously ascribed to hyperacidity and colon catarrh, which interferes with the normal elimination of calcium by the colon. I have found diet and the use of magnesia beneficial, and think that pankreon, if it can be procured, would help the fat absorption. This is all my chemical and clinical necromancy shows me in reading the metabolic conditions of your patient. I enclose a diet list which I employ in such cases. (Signed) A. E. Austin.

On August 1, I find a note copying a report stated as follows: I found no evidence of tuberculous or cancerous process in the intestine. There was no blood, nor were there any fragments which might come from a growth in that vicinity. What the reactions are from which she suffers is hard to say, but I hope that on a modified diet she will improve.—A. E. A.

DIET LIST FOR PHOSPHATURIA.

Breakfast. A baked apple or pear with cream and sugar; picked fish or bacon cooked crisp; toast or stale rolls with plenty of butter; coffee with a little cream and sugar. After the meal, two teaspoonfuls of milk of magnesia are to be taken.

Dinner. Soup (clear) if desired; any kind of meat cooked in any way desired, except liver, sweetbreads, or kidneys; no vegetables except white turnip, asparagus, onions, watercress, cabbage, cauliflower and rice. Any pudding of rice, sago, tapioca, cottage pudding with apples or pears cooked with it. After the meal a glass of Vichy water.

Supper. Cold meat, fish in any form, oysters cooked in their own juice with butter or eaten raw, but not in milk stew; apple sauce or stewed or canned pears, or jelly or marmalade made from apples, pears or peaches; stale rolls or toast with plenty of butter; after the meal, two teaspoonfuls of milk of magnesia.

Remarks. Tea and cocoa should be avoided; no milk or milk products other than those mentioned should be taken. These vegetables must be avoided: spinach, beets, potatoes, green peas, green beans, tomatoes, celery, as well as the fruits, figs, currants, plums, and strawberries (avoid them whether fresh or preserved). Milk and particularly the yolks of eggs are to be avoided.

Obviously this diet could not be given through a tube, although gastroenterologists of note claim that practically all essential elements, including vegetable juices, etc., can be given in that way. We were, therefore, obliged to resort to forced feeding which, thanks to the wonderful patience and coöperation of the nurses who were much interested, we faithfully kept up, carrying out the directions for feeding to the letter. The following report three months later rewarded us for our effort, considering the fact that the clinical symptoms showed a corresponding improvement.

Nov. 27, 1916. I have made a re-examination of the urine and feces of your patient and find that the urine is now practically normal, containing no indican and no calcium oxalate, nor phosphates; in fact, is absolutely free from sediment of any sort. This, I think, justifies the diet which was suggested, together with the general improvement of the patient, and at present, I see no reason why she cannot return to eggs and milk, in spite of their excess of calcium.

The stool, however, though containing no starch or meat fibers, does contain a large amount of fatty acid crystals, and at the same time being so light in color that I am sure there is some deficiency in the discharge of bile into the intestine. This extreme loss of fat in the stool is probably why you have been unable to make more progress in increasing the weight of the patient. As the fat is wholly split, we can hardly hold the pancreas responsible for this condition, but must attribute it, as stated, to deficiency of bile.

The connection between indicanuria and oxaluria and mental disturbances is not so clear, but many works have been published showing that the mentally unbalanced usually possess an increase in indican and an increase in the ethereal sulphates, which so often go together.—A. E. A.

Our next duty seemed clear—to endeavor to increase the flow of bile by colalin or other bile stimulants, then to decrease fat in diet to establish a fat tolerance as it were, to try various kinds of fat, since it might be supposed that the problem of fat metabolism might bear an important relation to stability of nervous tissue.

Here is a case in which for long periods the physical condition seemed hopeless—a patient so insane as to make coöperation most difficult in the beginning, and yet three months of enforced rest and enforced rational feeding so regulated the bowels that they moved normally every day with no enemata, digestion was very good, tongue perfectly clear and appetite very good. (Indeed, the patient herself said that her digestion and bowels had not been in so good a condition for twenty years.) Had the cecum or colon in part been removed before such an experiment had been tried, it would have been impossible to have given chemical or physiological treatment a chance. Had mechanical massage been tried, we might have overvalued its effect. Do not cases of this sort lead us to believe in an exhaustion of our medical methods under trained observers before resorting to surgical methods?—although in acute obstipation or cancer not to employ surgical aid at once is equally culpable.

Since the New England Hospital has offered surgical advantages to Massachusetts Homeopathic Hospital women, may we not hope that the Massachusetts Homeopathic Hospital

may offer to New England Hospital women the advantage of the point of view gained by the excellently trained scientific research workers in their Evans Memorial for Clinical Research? It should be added that this mere glimpse into scientific methods would seem most crude to their workers, trained as they are in various body function tests, etc., but as Dr. Folin once said: "If you only have enough training to catch the research point of view, you will be able to refer problems of clinical importance to those scientifically trained and thus do your part toward the advancement of medical science."

The present time is hardly one to advocate extensive research, when so many pressing problems are upon us, but let us then be temporarily content to follow conservative proven methods, lest for want of time and money and trained workers, we lose sight of truths which once lost sight of are difficult to see again. We can hope, in more propitious times to work out the problems which now we may merely note as worthy of consideration.

Clinical Department.

PRIMARY SYPHILIS OF EYELID, WITH REPORT OF A CASE.

By Henry D. Lloyd, M.D., Boston.

In regard to chancre of the eyelid, Marshal' states: "Most frequently the chancre is on the conjunctiva." The same authority gives the order of frequency as conjunctiva of lower lid, the cul-de-sac, and lid margin. Following these situations in frequency are the inner angle of the eyelids, upper-lid, and cul-de-sac; next the ocular conjunctiva; the cutaneous surface is the least common situation. Lloyd Thompson in his recent monograph, in discussing extragenital chancres, places primary infections of the eyelids as fifth in order of frequency, those of lips, tonsils, tongue, and breast occurring with greater frequency in the order named, while those of the fingers are sixth.

REPORT OF CASE.

August 14, 1917, H. T. came to the South Medical Department, Massachusetts General Hospital, and upon close questioning gave the following history: Left eye had bothered him about six weeks, possibly longer. Sometime in June he went out on a "party," but denies drinking to such excess that he did not know what he was doing. He absolutely denies any sexual exposure. "The morning after" in making his toilet he noticed that the towel upon which he wiped his face was quite dirty and later ascertained the fact that the man who previously used the towel had the pox. On or about the first of July his eye began to bother him.

Physical examination showed a well-developed and nourished male, color good. Tongue somewhat coated, mucous membrane of mouth and throat not abnormal. Pupils equal and react to light and distance. Knee jerks present and equal; normal. Left eye shows a thickened upper lid with a superficial ulceration 5 x 8 mm., situated at outer canthus, this ulceration occurring upon the skin surface of the upper lid. The pre-auricular gland was enlarged to the size of a large pea, firm, not tender. There was also a chain of enlarged glands in the posterior cervical triangle upon that side. The skin showed a widespread maculo-papular rash of characteristic color and distribution, extending upon the forehead and into the scalp. There was no sign of genital primary or of one about the anus. Neither were the inguinal glands remarkable.

We tried to recover spirochaetae pallidae from the lesion described above, but failed. The Wassermann was strongly positive. The patient was given two injections of diarsenol, of 0.4 gram each, intravenously, at weekly intervals, and the perchloride of mercury by mouth. He failed to return for further treatment. Early in December, 1917, after writing him several letters the patient came to my office and submitted to an examination. At this time there were no clinical signs of active

syphilis and the left eyelid showed only slight thickening. The Wassermann reaction was still strongly positive. In spite of advice, he has not returned for further treatment.

My thanks are due Doctor C. Morton Smith for permission to report this case.

REFERENCE.

[1] Power and Murphy: System of Syphilis.

Society Report.

BIOLOGICAL CLUB OF PHILADELPHIA.

STATED meeting Thursday, February 28, 1918, at 8 p.m., held in Cadwalader Hall of the College of Physicians of Philadelphia, Professor E. E. Wildman presiding.

How Can Biologists of Philadelphia Best Help the Medical Profession in the Present Emergency?

THE DEMAND FOR AND TRAINING OF LABORATORY TECHNICIANS.

DR. JOHN A. KOLMER: In the present day of refined and practical laboratory methods for the diagnosis of disease, not a small part of the education of the medical man is embraced in a working knowledge of laboratory methods. Since the entry of the United States into the war the demand for technicians in our laboratories is constantly increasing. It is probable also that such technicians will be required in the hospitals for the wounded and in the laboratories of the cantonments. The object of this communication is to emphasize the importance of large laboratories, and particularly those connected with teaching hospitals, to undertake the systematic training of properly prepared young women in laboratory methods to meet this demand. In the past two years the polyclinic has prepared more than seventy young women for this work. In the course of instruction the greater amount of attention is devoted to technic and practical instruction; the classes are small and the object is to give a broad training enabling the technician to cope with a varied amount of work. Candidates for instruction must be high school graduates or possess the equivalent in preliminary education; a knowledge of chemistry and biology is helpful but not essential. In the Polyclinic Laboratories the first course of instruction includes systematic training in the preparation of the various culture media, the methods of embedding and staining sections of tissue, preparation of stains, sterilization of glassware. A successful examination in these admits the student to the course in clinical pathology. At the completion of this course I advise students to fill positions for wider experience and then return for instruction in complement-fixation technic, with particular references to the Wassermann and gonococcus complement-fixation tests. Qualified young women are readily trained in the conduct of the Wassermann reaction. Instruction is also offered in bacteriology and the preparation of bacterial vaccines and in advanced clinical pathology. The majority of our technicians have been offered salaries averaging $900 a year with maintenance. It is to be hoped that other States will follow the example of Pennsylvania in requiring her institutions for the care of the sick to offer adequate laboratory facilities for the modern diagnosis and treatment of disease and for the instruction and experience of internes. In order to meet the increasing demand for laboratory technicians it is hoped that teaching institutions will offer adequate and comprehensive courses of instruction in this connection.

I would emphasize that owing to the increasing demand for laboratory technicians, by reason of the fact that the State of Pennsylvania requires hospitals to employ technicians, to fill vacancies created by the absence of bacteriologists in the Federal Service and because the Federal Government is requiring the aid of laboratory technicians, biologists of Philadelphia can aid in the present emergency by carefully selecting young men and women for training as laboratory technicians. Owing to the growing scarcity of physicians, which may be augmented if the war continues, the biologists of Philadelphia may do much by preparing young men and women for the study of medicine. In addition to these aids, the biologists of Philadelphia may be able to conduct research work of distinct benefit to the country at large, and the Biological Club should endeavor to coöperate with the National Research Council.

HOW CAN THE BIOLOGISTS OF PHILADELPHIA BEST HELP THE MEDICAL PROFESSION IN THE PRESENT EMERGENCY?

DR. BERTA M. MEINE: The present crisis, which presents unparalleled upheavals in every phase

of our work, has distinctly differentiated the past, the present, and the future. Our best plans for progress for pre-war times belong to the past. The present contributes its problems of supplying our own and our allied armies with medical officers, of doing the medical work at home and of supplying physicians for present and future demands. The future comes after the war. Every possible effort to find recruits for our profession must be made and these must be trained with due regard to the new knowledge and methods developed by the war. Dr. Horace D. Arnold in an address at the Medical Conference on Medical Education said that every effort to increase the output of physicians must be made, and that the modern thorough training with its broad scientific basis should be fully maintained. He recommends a reorganization of the curriculum, with a view of a greater uniformity in the course of instruction, the rearrangement and readjustment of the course to include new and important knowledge developed by the war and to omit non-essential details. This would make the transferring of students from one school to another possible without the usual loss of time required at present. Sessions of the medical schools during the summer were also thought advisable, and Dr. Arnold suggested that this method of time saving may have to become compulsory. He said that "Medical teachers of the draft age play a most important part in the methods of medical education adopted in recent years. The induction of these men into active service would seriously impair the efficiency of medical teaching unless they could at once be replaced by equally satisfactory teachers." . . . . . "The scarcity of teachers is more likely to be felt in the laboratory subjects. A possible solution of this difficulty may be found in the combination of the teaching forces of two or more schools in a medical center. The schools should consider the feasibility of such combinations, and should prepare to make such arrangements if they become necessary." It would appear then that the biologist, as teacher of the high school student, could assist the medical profession very materially in obtaining desirable recruits. He has a wonderful opportunity of selecting and interesting the suitable young men and women. He could not only encourage the student to study medicine, but assist him in obtaining his premedical work in the best manner and shortest time. On the other hand, advice to the student who thinks he would like medicine, but who is made for other things, might avail much for the student and the medical instructors. Another suggestion for helpfulness is that the medical profession and the biologist consider seriously the advisability of the biologist teaching certain of the branches of medical science, such as bacteriology, chemistry, etc., if the combination of medical teaching becomes imperative. There are not enough medical men beyond the draft age to supply the vacancies. Never before has there been more fully realized the necessity that each individual contribute the very greatest amount of the very best quality of work that he can do better than anything else. Therefore I would most heartily second the suggestions made by Dr. Kolmer. The highly trained non-medical research worker may direct his attention to problems in preventive medicine. He may work independently or with the physician. As associates, the clinician and the laboratory worker may produce results far more valuable than either of them could independently. Specially trained persons may do the outlined clinical laboratory work and probably in some instances better than the more highly trained person with many other duties. Send us the best you have and we shall attempt to train them well and place them where they are most needed.

Book Reviews.

Annual Reprint of the Reports of the Council on Pharmacy and Chemistry of the American Medical Association for 1916.

This volume contains the reports of the Council which have been adopted and authorized for publication during 1916. It includes reports of the Council previously published in the *Journal*, along with such editorial comments as have accompanied them. In many instances there have been added to these reports the more strictly scientific matters which, because of lack of space or because of their highly technical character were not published in the *Journal*. In addition, the volume contains reports of the Council which, because of their lesser importance, were not published in the *Journal* and which as a matter of record are included here. That the Council's official reports may be made available to physicians, chemists, pharmacologists and others interested in medicine, the Council authorized publication of this volume.

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THE FIGHT AGAINST VENEREAL INFECTION.

THE conservation of the nation's health is a subject which has been engaging more and more study of late, and during the war the great drain upon man power entailed by venereal diseases has brought prophylaxis and prevention before the public. We ought to note here, as Sir Francis Champneys points out, that there is a distinction between the two. In this view prophylaxis means: (*a*) the provision of disinfectants for use before and after exposure to infection, and (*b*) the issue of prophylactic packets to men going on leave; while prevention includes these measures and early treatment of contaminated men and of those in whom syphilis or gonorrhea have manifested themselves. From the discussion and advertisement of venereal diseases carried on in the press, the real nature of prophylaxis is beginning to dawn upon the public mind.

In spite of the publicity of the discussion, the Anglo-Saxon nations are still unable to deal successfully with the prevention of venereal diseases. The practical question is unsettled,—Which is the greater evil, that numbers of soldiers should return with venereal diseases to infect future generations, or that they should visit houses under medical inspection, in which the French and Germans and other European nations see no harm? It is true that the ideal thing would be that soldiers should do neither, and many doubtless do maintain a clean standard, but it is estimated that the number is comparatively small. Thus in a letter published in England it is stated that a "million men have come overseas. Over one-third of that million becomes infected with venereal diseases every twelve months, and many thousands are constantly sick in venereal disease hospitals." In sober truth the actual number is even larger. (*The Nineteenth Century*, September, 1917.)

Now that American troops are being assembled for overseas duty and in home camps, it is obvious that the only way of protecting them from this danger is to create a public sentiment in favor of prophylaxis. Unfortunately, there is not a similar clarity as to the proper means. Since the outbreak of the war we have read a great many different opinions; we have examined the evidence and studied the reports from France, Germany, Russia and Italy with care, and the impression left is that success in combating venereal infection—we do not mean the diseases when they have once declared themselves—is essentially one of discipline, both military and national.

Under the head of military discipline comes the use of the prophylactic packet. It is certainly a debatable point, involving moral and religious questions of the utmost gravity. As to the ethics of the practice of handing packets to soldiers and sailors, medical authorities and high officials do not agree. For example:

"The use of this packet I believe to be immoral; it savors of the panderer."—Mr. Daniels.

"It should be resorted to as soon as possible after exposure."—Dr. Charles E. Riggs, U.S.N.

"The ethical question depends upon the manner of prophylaxis—whether it means before the act; or after the act, but before the disease shows itself."—Sir Francis Champneys.

There seems to be no objection anywhere to the use of the packet after exposure, but whether it should be forced upon soldiers and

sailors beforehand is a different matter. If the issue of the packet becomes a disciplinary rule, so that every soldier and sailor is given the prophylactic, whether he intends to use it or not, it obviously tends to suggest its use, and to drive men from the class of abstainers into those who deliberately indulge in irregular sexual intercouse. The effect, as a matter of experience, is not uniform. As Sir Francis Champneys well observes: "The question arises whether more medical harm is done by adding to the number of those who expose themselves under some protection than by limiting the protection to those exposed to the risk of infection." As there is no absolute prophylactic, and as the safest prophylactic of all is the avoidance of exposure, there seems to be as yet no final answer to the question.

Apart from moral considerations, the value of prophylactics is a question of discipline. In the German and Austrian armies, they have been most useful, and in many British regiments it is known that they have greatly diminished the incidence of venereal diseases. But the conditions in these armies are extremely different. In the Teuton armies the conditions are favorable to medical and police inspection, and a merciless system of registration of prostitutes. In countries where the state expects to superintend every action of the people's lives from the cradle to the grave, it is obvious that men and women alike will be allowed little freedom of choice, and they are taught to obey sanitary regulations that in Anglo-Saxon states are still matters of individual judgment. It happens that, owing partly to discipline and partly to national docility, the scientific moralists who inhabit the Central empires are as near the model of forced prophylaxis as any race is ever likely to get.

The extent of this discipline among soldiers and the civilian population is revealed in the army orders published this winter in the *Zeitschrift für Bekämpfung der Geschlechtskrankheiten*. The military authorities in German cities, recognizing the peril from loose women that threatened their men, took the problem in hand with characteristic thoroughness at an early stage of the war, and published a list of cafés, hotels, restaurants, and picture shows that were absolutely forbidden to men in uniform. Some quarters of the towns were entirely closed to soldiers, and all questionable female characters were ruthlessly cleared away from the streets. Certain German taverns where waitresses served beer and wines, were closed, putting an end to a social danger. The soldiers on leave, and the sick and wounded, have very little liberty. They are not only kept within the lazaret and barracks, but are forbidden to have any intercourse or exchange words with the people passing in the street.

In comparing the street conditions of Germany and England and America, nothing strikes the medical observer more than the number of men in uniform wandering about at will. It is inevitable that there must be a considerable amount of clandestine prostitution. A great obstacle in the way of sanitary and moral prophylaxis presents itself here. It may be inquired how far the use of prophylactic packets will avail. Under these conditions it is at least doubtful whether men will go to the trouble of applying calomel cream and injections of protargol and permanganate solutions. Valuable as these are if properly used, the evidence shows that the social dangers of the cities must be grappled with in other ways, that is to say, by disciplinary measures. Otherwise there is the danger of falling into the old error of locking the stable door after the horse has been stolen. Thorough-going prophylactic measures include, besides disinfectants, the protection of both sexes from the risks of street intercourse.

The more we examine the problem the more clearly do we perceive that the essence of prophylaxis is, after all, moral in its nature. That young men of healthy physique and certainly not deficient in virility can abstain from irregular sexual intercourse without harm is today an established physiological fact. But to the expert in venereal diseases, it does not seem to follow that the use of prophylactics before exposure is immoral. Yet Sir Francis Champneys, who represents medical opinion as well as the National Council for Combating Venereal Diseases, says: "If there were no such things as moral considerations, no doubt it would be right to issue prophylactic packets without any restriction as to time, and to teach our children how to avoid venereal diseases without any regard to morals and at all costs. . . If 'scientific medicine' cannot be satisfied unless packets are given before the act, there is an absolute deadlock, and a choice must be made." As this is the official sentiment of England and America the choice is, indeed, very difficult.

In this discussion but little is said about such prophylactics as thorough washing with soap and water before and after exposure. It seems somewhat inconsistent that these measures are not regarded as immoral. They are among the most practical, and in European clinics both sexes are taught their value. They have one great advantage. The influence of alcohol, under which so much irregular sexual intercourse occurs, does interfere with the use of a packet, and of such remedies as calomel ointment, tubes, and injections, but ablutions with soap and water are so much a matter of convenience that a man, unless he be very drunk, will take such simple measures of cleanliness.

In view of the dangers of venereal diseases, of the facts that syphilis ranks third or fourth among the killing diseases, that gonorrhea is the cause of sterility and nameless suffering among women, that gonorrhea and syphilis are the causes of blindness and insanity in the offspring, it does not seem immoral to avoid these miseries, even at the risk of suggesting vice to some who are inclined to it. Most medical men, we believe, take this view, though they may differ as to the relative value of medical prophylactics and the best way of using them.

ANNUAL REPORT OF THE STATE DEPARTMENT OF HEALTH.

THE annual report of the State Department of Health of Massachusetts has been submitted for 1916. The Department is organized in seven divisions, all of which have done efficient work throughout the year. The Division of Sanitary Engineering has given advice to one hundred and fifty-four cities and towns through the year, in regard to water supplies and sewage. All sewer outlets discharging into the sea or tidal waters were examined during the year, and over 300 sources of water supply for towns, cities, and fire districts controlled by analyses. Sewerage systems have been inspected, and continued supervision maintained over water courses to protect against pollution.

The Division of Water and Sewage Laboratories performs all laboratory work required under the statutes governing the purity of inland waters. It also makes extensive investigations, and does analytical work in problems of water supply, sewage disposal, and trades wastes disposal. In the past year over 6000 samples of water, sewage, effluents, factory wastes, etc., were analyzed in these laboratories, and bacteriologic examinations of over 4000 samples were made.

The Division of Food and Drugs continued its commendable work under the statutes covering food and drugs, including milk, cold-storage products and meat-slaughtering inspection. Over 11,000 samples of milk, food, and drugs were examined during the year. A large amount of work was done in attempting the manufacture of dioxy-diamino-arseno-benzol, or allied substances for the treatment and cure of syphilis. The researches promise success, and if successful will have a greater effect upon the problem of syphilis than any other known procedure.

The Division of Communicable Diseases has made notable improvements during the year in the methods of control over communicable diseases. In this Division there is now established an endemic index for each of the important diseases for each community in the Commonwealth. By a glance at this index any unusual prevalence is apparent, and prompt investigation reveals whether it is a mere coincidence or the beginning of an outbreak. Much better reporting by physicians is evident, and calculations based on the ratio of deaths to reported cases seem to indicate that Massachusetts physicians report more thoroughly than those of other States. Over 22,000 specimens were examined by this Division during the past year, at an average cost of 26 cents per specimen.

The scope of the work of the Division of Biologic Laboratories was enlarged during the year. The work of examination of dogs for rabies, and the complement-fixation test for glanders, have been done for the Bureau of Animal Industry. There were distributed by this Division during the year about 175,000 doses of diphtheria antitoxin, 1696 doses of anti-meningitis serum, 130,000 doses of vaccine virus, and 46,000 doses of typhoid prophylactic. For the Bureau of Animal Industry over 1000 tests were made. Over 25,000 tests for the Wassermann reaction were made during the year, at a cost of less than 20 cents per test.

Over 60% of the health officer's problems may be attributed to diseases which can be reduced in prevalence only by means of education in personal hygiene. Educational methods alone promise results in infant mortality, can-

cer, and diseases of the circulatory and urinary systems. Reduction of the death rates, therefore, depends almost entirely upon education of the individual citizen, and this work is carried on by the Division of Hygiene. All recognize the danger from communicable diseases, and the value of efforts to prevent them. All do not yet realize in equal degree the economic loss resulting from sickness in general, the high infant death rate, children poorly born and handicapped in physical and mental development, school children below par and unable to keep up with the normal child, individuals needlessly incapacitated by organic diseases of the heart, blood vessels and kidneys, in considerable part the result of faulty living, and the loss to the community of lives from such diseases as tuberculosis and cancer because of the failure to detect these diseases in their early stages, when prospect of recovery is most promising. This knowledge must be brought to the people in general, and by means of lectures, exhibits, and pamphlets the Division seeks to do it. During the year, 628 lectures were given, and nearly 100,000 attended them. Moving picture health films were exhibited 372 times, and the child welfare health exhibit shown in 24 cities and towns.

Statistics show that the infant mortality rate is steadily decreasing, but this is largely due to good work in the large cities. Forty per cent. of infant deaths occur in the first month, showing that prenatal causes are a potent factor. More prenatal work must be done, especially in small communities, where the rate is far too high. Work for school hygiene is often unsystematic and poor. There should be a physical and mental survey of every school child made at least once a year and recorded on a card, together with the outline or prescription of hygienic treatment necessary to bring the child to normal or maintain it at normal. Not only children with defects should be prescribed for, but also those below normal in physique or mental equipment. The tuberculosis campaign of the Department has made great strides in the past year. The greatest possibility in the prevention of tuberculosis, that is, through the school child, will not be realized until there is a uniform scientific system of inspection of school children. All cities and towns of more than 10,000 population are now complying with the law to provide a tuberculosis dispensary satisfactory to the Department. In the ordinary diseases of childhood—measles, whooping cough, and scarlet fever—health officials are doing everything possible in an official way, so that still further reduction in these diseases depends largely on the education of the individual. Diphtheria should be reduced more rapidly, in view of the fact that a specific exists, which if given sufficiently early and in proper dosage, makes a fatal issue almost impossible. Failure to call a physician in time to administer the antitoxin effectively most frequently causes death from diphtheria, therefore the remedy must be educational. Pneumonia, taken collectively in all forms, is the greatest single factor in our death rate. Lobar pneumonia alone causes over 3000 deaths in Massachusetts annually, and ranks second only to tuberculosis among the communicable diseases as a cause of death. It should be placed on the list of diseases whose reporting is compulsory, as it is a dangerous communicable disease. The Department advises the manufacture and distribution of an antipneumococcic serum to physicians for use in Massachusetts. To combat syphilis effectually, facilities for the diagnosis thereof must be placed at the disposal of hospitals, dispensaries, health boards and physicians. Effective treatment should be made available, either free or at a reasonable price.

SECRETARIES FOR PHYSICIANS.

In the past secretaries to physicians have had no special qualifications for the particular services they are expected to render. They have been good stenographers, and if, perchance, their training has been ample in general science they have sooner or later picked up certain parts of the routine of the medical laboratory as well as the office work.

Two years ago Simmons College inquired of one hundred representative physicians whether a specialized training for a medical secretary should turn out a worker of special value for busy physicians and for hospitals and dispensaries, and their opinion was sought on what would constitute an ideal course. The responses demonstrated definitely that a secretarial and technical training should lead to a useful and special vocation for which a want was felt.

With the design of meeting this need, the suggestions given were carefully considered, and a course of training was adopted which included practically all of the technical secretarial work of stenography, typewriting, filing, cataloguing, and bookkeeping given to the regular secretaries, and, in addition, familiarity with the medical vocabulary, special medical German and abstracting, and courses in general chemistry, bacteriology, and applied routine medical laboratory work. This June the first class completing this special course will graduate and be eligible to demonstrate the special services they are qualified to render. It is confidently believed that the combination secretarial-technician will soon prove her merit to a new vocation, and that hospitals, clinics and specialists, who may have certain routine laboratory work, as urine or blood analysis, or the culturing or microscopic examination of pathologic specimens, will find her of exceptional value. By writing to Simmons College further information may be obtained regarding the training and the special qualities of the graduating students.

MASSACHUSETTS FREE SCHOOL ON PUBLIC HEALTH.

The Committee on Public Health of the Massachusetts Medical Society has determined upon the following topics for the various sessions of the Four Day Free School on Public Health, which it is to hold May 28-31st, in co-operation with State and Federal public health organizations:

Tuesday a.m.—Water and Sewage.

Tuesday p.m.—Public Health Laboratory.

Wednesday a.m.—Public Health Reports.

Wednesday p.m.—Specific Diseases.

Thursday p.m.—Industrial Hygiene.

Thursday evening.—Dr. Peter's lecture on Public Health Education in China, followed by a social hour.

Friday a.m.—Child Welfare.

Friday p.m.—Public Health Administration.

Some of the best-known men in public health work will address these sessions and at each session there will be an opportunity to ask questions regarding particular problems.

MEDICAL NOTES.

Meeting of the American Public Health Association.—The next meeting of the American Public Health Association will be held in Chicago, October 14-17, 1918. The central theme of the meeting will be, "The Health of the Civil Population in War Time."

Annual Meeting of the National Tuberculosis Association.—The National Tuberculosis Association, which is the newly incorporated successor of the National Association for the Study and Prevention of Tuberculosis, will hold its fourteenth annual meeting in Boston, June 6, 7, and 8, 1918, with headquarters at the Copley-Plaza Hotel. The meeting is to be divided into three sections: the Clinical Section, with Walter R. Steiner, M.D., of Hartford, Conn., as chairman; the Pathological Section, with M. C. Winternitz, M.D., of New Haven, Conn., as chairman; and the Sociological Section, with James Minnick, of Chicago, Ill., as chairman. Subjects dealing with all branches of anti-tuberculosis work are to be discussed.

London Death Rates in February.—Statistics recently published show that the total death rate of London in February was 16 per thousand inhabitants living. Among the several districts and boroughs, the highest rate was 27.9 in Shoreditch, a populous east side slum, and the lowest was 10.9, in Hampstead, an open suburb on the north.

Oleomargarine in Public Institutions.—In a letter to the City's legislative representative at Albany, the New York City Commissioner of Health advocates the passage of a bill now before the legislature removing the restrictions which now prohibit the use of oleomargarine in institutions maintained wholly or in part by public moneys:

"The Department of Health wishes to express its approval of the proposed measure on the ground that the excessive price which the City of New York has to pay for butter places an undue burden upon the taxpayers by prohibiting the City authorities from purchasing a wholesome and nutritious substitute therefor.

The repeal of the prohibition against purchasing butterine and oleomargarine will vest discretionary power in the officials in charge

of institutions to determine whether or not it would be advisable to supply the inmates of public institutions with butter or a wholesome, nutritious substitute. Public officials should have such discretionary power, and the repeal of the present law would accrue to the benefit of the taxpayers without detriment to inmates of public institutions."

WAR NOTES.

AMERICAN SURGICAL TEAM WOUNDED.—An announcement from the War Office in London on April 11 makes the following statement: "In the recent fighting and retirement along the western front, a certain number of medical units, such as casualty clearing stations, fell into the hands of the enemy. All the medical and nursing personnel of these units and the patients were safely evacuated, none of them falling into the hands of the enemy. It is regretted that in the process of evacuating the casualty clearing stations a number of casualties occurred among the medical and nursing personnel. This was inevitable as the units had to be cleared out at short notice under, in many cases, a heavy fire. A surgical team, which very generously had been sent to one of our casualty clearing stations by a Philadelphia hospital, was heavily bombed, and two officers and one nurse were wounded." It is believed that the two officers and the nurse mentioned in the London dispatch as wounded are Dr. Edward B. Hodge, Dr. Henry Dillard, Jr., and Miss Isabella Stambaugh, all attached to a base hospital unit sent out by a Philadelphia hospital. Word that they had been wounded was cabled to Philadelphia early in April by the medical director of the unit.

TYPHOID DANGER TO ARMY ENDED.—Official figures obtained at the office of the Surgeon-General show that there have been only eight deaths from typhoid fever in army camps in the United States since September 21, 1917. Dysentery has been stamped out for the first time since wars began. There has not been a single death from the cause, and there are no cases now under observation. The records today show that but a single suspected case of typhoid is under observation. The sick and death rates from this disease are so small as to be considered negligible. Reports by officers of the Surgeon-General's office show that during the Spanish-American war the death rate from typhoid was 8.79 per thousand. If that rate was effective today, the American armies, on the basis of 1,500,000 men in the service, would have lost 13,000 to 15,000 men from this disease alone.

A campaign is now being conducted to prevent the outbreak of an epidemic of dysentery in the camps during the summer, and the officials are confident that it can be held in check. It is believed that the danger of a large number of deaths from typhoid has been definitely averted as a result of the advanced methods adopted. Here are the annual death rates from special diseases per thousand for the six months ending March 8, 1918: pneumonia, 5.2; meningitis (all kinds), 1.04; measles, 0.096; scarlet fever, 0.049; tuberculosis, 0.15; diphtheria, 0.042. The death rate from typhoid is withheld because its publication would make known the number of men who have been inducted into the military service.

WAR RELIEF FUNDS.—On April 15 the totals of the principal war relief funds reached the following amounts:

Halifax Fund	$698,895.25
Belgian Fund	667,910.08
French Wounded Fund	346,955.42
Armenian-Syrian Fund	300,823.03
Italian Fund	161,383.60
French Orphanage Fund	165,851.48
Polish Fund	105,626.52
Home Service Fund	13,718.00

REVIEW OF WAR SURGERY AND MEDICINE.—In the Review of War Surgery and Medicine for April, issued from the office of the Surgeon-General, are to be found several very instructive articles on subjects important in surgical and medical practice at the front. Such subjects as practical points on use of immobilization in war surgery, dealing with proper construction of splints and use of traction; the treatment of wounds, involving a discussion of flavine as an antiseptic; the use of soap solution for similar purposes; and the value of excision and primary suture are touched upon. Further articles describe a surgical treatment of war wounds of the abdomen, wounds of the joints, repair of face and jaw injuries. There are abstracts from otolaryngological literature, and from ophthalmological literature, laboratory studies of pneumonia and meningitis, and short reviews on the subjects of vaccines and parasites. Copies of this interesting manual may be had for ten cents each, by ad-

dressing the Government Printing Office, Washington, D.C., and it is recommended that medical officers thus secure copies for themselves.

A NEW AMERICAN HOSPITAL IN ENGLAND.—The American Ambassador to England on March 26 opened the American Red Cross Hospital No. 24 (the fifth to be opened in England), at 24 Kensington Palace Gardens. This hospital has been presented and equipped and will be maintained by Mr. and Mrs. A. Chester Beatty, of New York.

The hospital is auxiliary to the Military Orthopedic Hospital at Shepherd's Bush, and for the present will accommodate British and Dominion officers until it is needed for Americans. The medical and nursing staffs are entirely American. There are eight wards, and accommodation for 36 orthopedic cases. The color scheme of eider downs and screens is pale blue in some wards, golden brown in others, and rose in the remainder, and the walls are oyster white. The wards bear the names of famous Americans—George Washington, Stonewall Jackson, Robert E. Lee, U. S. Grant, Abraham Lincoln, Alexander Hamilton, Thomas Jefferson, and Benjamin Franklin.

APPOINTMENT IN THE MEDICAL RESERVE CORPS.—Dr. William K. S. Thomas, F.A.C.S., a practising physician of Cambridge, Mass., has been appointed a captain in the Medical Reserve Corps. Dr. Thomas was born in Duxbury, graduated from Harvard in 1901, and from the Boston University School of Medicine in 1903. He was then assigned to duty in the Massachusetts Homeopathic Hospital. Capt. Thomas has been assigned to the hospital unit at Camp Dix, N. J., and he expects to be sent to France in May.

ARMY HEALTH GOOD.—Health of all troops in the United States continues good, the War Department announces in a report covering the week ending April 12. Both hospital admission and death rates were lower than in the preceding week. The highest rates were at National Army cantonments, probably because of the mobilization of large numbers of drafted men. The total number of deaths at all camps was 285, as against 290 the week before. Pneumonia continues in all the larger Northern camps, with some increase in the number of new cases reported. No other disease is classed as generally prevalent.

AMERICAN MEDICAL OFFICER CITED FOR CROSS.—Report from Army Headquarters in France on April 19 states that Lieut. Theodore Higgins Sweetser of the United States Army medical service was recommended for the British military cross, following his official citation "for conspicuous gallantry and devotion to duty near Passchaendaele (in Flanders) on March 13, 1918."

The citation continues: "When the headquarters of another battalion received a direct hit from a gas shell all occupants, including the medical officer attached to the battalion, suffered from the effects of gas, Lieutenant Sweetser rendered valuable and gallant assistance to more than forty cases, and continued to do so when his two non-commissioned officers succumbed, although suffering himself at the time.

Lieutenant Sweetser also rendered valuable and most gallant assistance to a party of soldiers, the entrance of whose dugout had been struck by a gas shell. He roused forty men, forcing tubes and respirators into their mouths and applying the gas mask clips to their noses. But for his prompt action, a large number of men would have succumbed."

RED CROSS SENDS AID TO THE HOLY LAND.—Report from Washington has it that the Red Cross has made comprehensive plans for the relief of the people of the Holy Land, who for centuries have suffered under Turkish rule and who recently were rescued through the British conquest of Jerusalem. "For some time," says the announcement, "the American Red Cross has had under consideration the best way to relieve conditions in Palestine. All reports indicate that they are peculiarly deplorable. Famine and disease have enacted heavy toll. Typhoid and cholera were and are epidemic. In no part of the world into which the war has been carried is the condition of the civilian population worse than in the land of the Bible.

Dr. E. St. John Ward of Springfield, Mass., professor of surgery in the American University at Beirut, Syria, in an exhaustive report submitted a plan of relief. The War Council appropriated $390,000 as a beginning. The work is to be done in connection with the British Syria and Palestine Relief and the American Armenian and Syrian Relief Committee,

which already have been doing what they could.

The initial work of the Red Cross Commission will establish in Palestine four medical units to combat typhus, cholera and other diseases. A fully equipped hospital will be established at a point to be selected. Dispensaries and village work will be established in the less populated districts. The lay assistants attached to the medical unit will devote their time to general civilian relief, such as the distribution of clothing and food, and the rehabilitation and reconstruction of devastated areas. Appropriations so far made by the Red Cross are intended to cover a period of six months."

Others of the commission besides Dr. Finley include Dr. Ward, Jesse K. Marden, Boston; Giles S. Pease, Worcester, Mass.; A. Edward Kelsey, Portsmouth, R. I.; and Jacob Norman, Malden, Mass.

BOSTON AND MASSACHUSETTS.

Week's Death Rate in Boston.—During the week ending April 20, 1918, the number of deaths reported was 286, against 255 last year, with a rate of 19.02, against 17.22 last year. There were 43 deaths under one year of age, against 35 last year.

The number of cases of principal reportable diseases were: diphtheria, 71; scarlet fever, 37; measles, 326; whooping cough, 61; tuberculosis, 62.

Included in the above were the following cases of non-residents: diphtheria, 20; scarlet fever, 9; measles, 1; tuberculosis, 24.

Total deaths from these diseases were: diphtheria, 6; measles, 4; whooping cough, 4; tuberculosis, 27.

Included in the above were the following non-residents: measles, 1.

Appointment of a New Medical Examiner.—Dr. Vernon C. Stewart has been named recently by Governor McCall as medical examiner for the Woburn district, to succeed Dr. William H. Keleher, whose term soon expires. Dr. Stewart was born in St. John, N.B., graduated from the High School at Canton, Ill., and from Columbia College of Physicians and Surgeons at Columbia. He has been a resident of Woburn for fourteen years, has been chairman of the local board of health and school physician. Dr. Stewart is a member of the Massachusetts Medical Society, the Middlesex East District Medical Association, and the Woburn Medical Society.

Examination of Domestic Water Supplies.—The Public Health Bulletin for February, 1918, makes the following statement in regard to examination of domestic water supplies during the past year:

In July, 1917, the State Department of Health of Massachusetts, acting under the authority of a resolve passed by the Legislature earlier in the year, announced that it would undertake the examination and analysis of well and spring waters used as a source of domestic supply.

During the balance of the year, 69 requests for such analyses were received from various parts of the State.

The majority of supplies for which requests were received have been inspected, and samples taken. Owing to a shortage of engineers, it has thus far been impracticable to visit all the places requested. These will receive attention later.

A study of the inspection reports and analyses made discloses conditions which may well lead every householder dependent upon a private domestic water supply to consider seriously the possibility of its pollution. This conclusion is reasonable, even though the number of supplies examined was comparatively small, since they were taken in 27 different cities and towns, from all parts of the State, showing that the conditions noted were not confined to any particular locality.

About three-quarters of the supplies were shown to be badly polluted. Factors which contributed to such pollution were near-by privies and cesspools, sink drains running near the water supply, the close proximity of barnyards and manure piles, pollution from surface drainage.

The only excuse for many of the conditions noted would seem to be that purity of water supply and its relation to healthfulness had been wholly disregarded for the sake of convenience and accessibility.

The work thus far carried out would seem to indicate that in some communities, owing to underlying ledge, character of soils, and proximity of buildings, the securing of a safe domestic water supply is questionable or impossible; that in any case the location of the cesspool or privy and other sources of pollution

should be carefully considered in their relation to possible pollution of domestic water supplies.

The general elimination of polluted supplies such as have been found during these examinations would diminish rural typhoid, and, to judge from experience, would also tend to lessen the amount of sickness in general among the users of such polluted supplies.

ANNUAL MEETING OF THE MASSACHUSETTS HOMEOPATHIC SOCIETY.—Clinical demonstrations were a feature of the seventy-eighth annual meeting of the Massachusetts Homeopathic Society, held recently at the Homeopathic Hospital. Hon. Charles P. Batchelder, formerly of the Philippines, gave an address on "Problems of the Far East." The 200 members attending the meeting dined at Young's Hotel in the evening. The following-named officers were elected: Dr. William H. Watters, president; Dr. Wesley T. Lee, first vice-president; Dr. George N. Lapham, second vice-president; Dr. Edward S. Calderwood, recording secretary; Dr. Benjamin T. Loring, corresponding secretary; Dr. Thomas M. Strong, treasurer; and Dr. Alonzo G. Howard, chairman of the board of censors.

MEETING OF THE ANTI-TUBERCULOSIS LEAGUE. Dr. Vincent Y. Bowditch, president of the Massachusetts Anti-Tuberculosis League, in opening the annual meeting of the society, held recently at 3 Joy Street, stated that, though hampered by a reduction of active workers on account of the war, the League had done its best and had made material progress. The speaker referred to the recently completed "workshop and recreation building" at Rutland, under the auspices of the Rutland Private Sanatorium Association for the benefit of patients who are obliged to live in Rutland,—a scheme which marks an important advance in the methods of meeting the tuberculosis question. Miss Mary A. Abel, educational assistant of the community health demonstration at Framingham, read a paper on "Complete Community Organization for Health." Prof. Curtis M. Hilliard of Simmons College, in a talk on "Relative Values in Anti-Tuberculosis Work," declared that the most important part of the work of the public health nurse is that of education.

At the business meeting the following officers were elected: president, Dr. Vincent Y. Bowditch, Boston; vice-presidents, Dr. Carl A. Allen, Holyoke; Miss Louisa P. Loring, Prides Crossing; Dr. Walter P. Bowers, Clinton; Dr. George L. Schadt, Springfield; Rev. William B. Geoghegan, New Bedford; Dr. Arthur K. Stone, Boston; Dr. Eugene R. Kelley, Boston; Mr. Charles O. Tyler, Abington; secretary, Seymour H. Stone; acting secretary, Miss Ethel M. Spofford, Boston; treasurer, Arthur Drinkwater; acting treasurer, Romney Spring, Boston.

Mrs. Anna M. Staebler, secretary of the Massachusetts Committee on Health in Industry, read a report on the conservation of man power. Miss Bernice W. Billings described follow-up work in the small towns of Massachusetts. Her paper was discussed by Miss Mary Beard of Boston, and by Dr. Vanderpoel Adriance of Williamstown, Mass. Dr. Charles J. Hatfield, executive secretary of the national association, gave statistics regarding "the terrible increase in the amount of tuberculosis in the warring countries," and described plans now in operation for combating the disease at home and abroad. A full account of the proceedings at this meeting will be published in a later issue of the JOURNAL.

ANNUAL REPORT OF THE CONSUMPTIVES' HOSPITAL DEPARTMENT.—The Annual Report of the Consumptives' Hospital Department of Boston was submitted recently for the year ending January 31, 1918. In common with all hospitals throughout the country, the Boston Consumptives' Hospital has felt the effects of the war through deficiencies in the staff. During the year a closer affiliation with local medical schools has been brought about, and definite arrangements have been made with the Harvard Medical School and the Tufts Medical School whereby advanced students in medicine are admitted to the wards in small groups under strict supervision, to have the advantage of the splendid clinical material there. Plans for work for patients of the Hospital are now going forward, and an attempt is being made to establish a night clinic for consumptive men who are able to continue their regular occupations. A new x-ray equipment has been set up, and a small chemical laboratory equipped for research work on renal function. There is great need for a nurses' home, as at present nurses are housed in very

crowded conditions in the building intended for employees other than nurses. Caring for the child is the most important thing in the crusade against tuberculosis, for it is necessary to make the resistance so strong against the disease that it will win in the fight. This means proper and sufficient care of the child, and especially the child of a tuberculous family. While the child is still surrounded by the opportunity for constant infection, and living in poverty, the chance of sufficiently strengthening the resistance is exceedingly poor. Much has been done elsewhere by removing these children for some time to country homes, sanatoria and preventoria. Boston has no such opportunity for her children, therefore the trustees call attention to the great need for, and the economic value of, such a home, and trust that it will be provided. The war will probably lead to a demand for beds for consumptives much in excess of the present number. This has been the experience of all the countries at war. The trustees believe that the present hospital can be very much increased in bed capacity at no great cost.

Hospital Bequests.—By the will of Timothy Smith, a well-known merchant of Roxbury, the following hospitals receive bequests: City Hospital, Brockton, $5000; Boston Nursery for Blind Babies, $5000; Children's Hospital, $1000; Boston Floating Hospital, $3000; Talitha Cumi Maternity Home, $2000; Cullis Consumptive Home, $5000; Perkins Institute for the Blind, $2000; Boston Emergency and General Hospital, $5000; Roxbury Homeopathic Dispensary, $3000; Massachusetts Homeopathic Hospital, for a free bed, $5000.

By the will of Susan E. Tyler of Lowell, Mass., the Lowell General Hospital receives a bequest of $1000.

NEW ENGLAND NOTES.

Manchester Physicians Missing.—Recent casualty lists report that two physicians of Manchester, N. H., are missing. Lieut. Benjamin R. Burpee enlisted in the Medical Corps soon after the United States entered the war, and was commissioned lieutenant in the M.O.R.C. After going abroad he was assigned to duty with the British forces, with whom he has been in active service up to the time of the recent German offensive. Lieut. Samuel Miller was also assigned to the British forces, and after a short service at the base hospital went to the front line at his own request.

The Massachusetts Medical Society.

NOTES FROM THE DISTRICT SOCIETIES.

District Correspondents.

Berkshire, A. P. Merrill, M.D., Pittsfield.
Bristol North, Arthur R. Crandell, M.D., Taunton.
Bristol South, Edwin D. Gardner, M.D., New Bedford.
Essex North, T. N. Stone, M.D., Haverhill.
Essex South, H. P. Bennett, M.D., Lynn.
Hampden, Laurence D. Chapin, M.D., Springfield.
Hampshire, E. E. Thomas, M.D., Northampton.
Middlesex South, William C. Hanson, M.D., Belmont.
Norfolk South, Daniel B. Reardon, M.D., Quincy.
Plymouth, Alfred C. Smith, M.D., Brockton.

Hampden District Medical Society.—The following members have so far (April 15, 1918) entered the Army and Navy:

W. J. Bostick, J. M. Birnie, H. F. Buddington, H. F. Byrnes, E. H. Burke, O. R. Blair, P. M. Cort, J. M. Claffy, E. B. Corcoran, W. A. R. Chapin, E. L. Davis, E. C. Dubois, J. H. C. Gallagher, A. H. Galvin, E. A. Gates, G. D. Henderson, D. E. Harriman, M. B. Hodskins, P. Kilroy, C. F. Lynch, F. D. LaRochelle, P. M. Moriarty, V. S. Merritt, J. M. Maloney, L. E. Mannix, W. E. Mulcahy, H. C. Martin, J. H. Quinn, R. A. Rochford, S. D. Rumrill, J. F. Streeter, M. J. Stoddard, G. L. Schadt, J. M. Tracy, W. R. Weiser.

L. D. Chapin,
District Correspondent.

Springfield Academy of Medicine.—The annual meeting of the Springfield Academy of Medicine was held on Tuesday evening, April 9, 1918. Officers for 1918-19 were elected as follows: president, Dr. A. O. Squier; vice-presidents, Drs. W. C. Leary and E. H. Guild; secretary, Dr. L. D. Chapin; treasurer, Dr. A. G. Rice; directors (additional), Drs. F. B. Sweet, R. S. Benner, E. A. Bates, H. W. Van Allen, R. B. Ober, G. L. Schadt, T. S. Bacon, J. M. Birnie, J. B. Comins, W. R. Weiser; censors, Drs. F. A. Woods, H. C. Martin, E. L. Davis, R. A. Kinloch, H. L. Smith.

The names of thirty-seven members who have entered the Army and Navy during the past year were read.

Dr. Paul P. Swett of Hartford read a very interesting paper on "Recent Advances in Bone Surgery," illustrated with lantern slides.

An open meeting was held at the Academy on Tuesday evening, April 16, at which Dr.

Willard Bartlett of St. Louis kept a large attendance enthusiastic until a late hour. His subject was "Certain Phases of the After-Treatment of Surgical Patients."

L. D. CHAPIN,
Correspondent, Hampden District.

Correspondence.

A LETTER FROM THE TRENCHES.

France, March 12, 1918.

Mr. Editor:—

I am very fortunate to be with one of the first infantry regiments to face the Germans, and to be the battalion surgeon of the battalion that helped to go over and get a few German prisoners. I had the pleasure of dressing a wounded German prisoner, if not the first in our division, then nearly the first, I think. I was in the front line post for three weeks during which time there were five medical reliefs, and all were royal, good and courteous gentlemen. I have fallen into luck wherever I have been, both as to opportunity of service and the personnel that I have met. Even now I have a most beautiful station, not on the front line, but near it,—near enough for me, having had two or more shells landed over us about noon, a piece of one of them coming within a few feet of me. It is spring here, with skylarks singing in early morning and dandelions showing their little circles of yellow on the sides of and around shell holes. Indeed, it is the first time since last October that I have been able to see any reason for seeing this sunny France. It is beautiful even now that the terrible blast of war has torn every tree and every human structure to pieces. What must it have been before? Certainly "la belle France."

With kindest regards, I am,

Sincerely yours,
FRANK PIPER, M.R.C.

NOTICE.

UNITED STATES CIVIL SERVICE EXAMINATION.

ACTING ASSISTANT SURGEON (FEMALE), $1,800-$2,500.

Public Health Service, May 21, 1918.

The United States Civil Service Commission announces an open competitive examination for acting assistant surgeon, for women only. Vacancies in the Public Health Service, at salaries ranging from $1,800 to $2,500 a year, and in positions requiring similar qualifications, at these or higher or lower salaries, will be filled from this examination, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion. Certification to fill the higher-salaried positions will be made from those attaining the highest average percentages in the examination.

In filling vacancies in this position certification will be made of the highest eligibles residing nearest the vicinity of the place at which the appointee is to be employed, except that upon the request of the Department certification will be made of the highest eligibles on the register for the entire country who have expressed willingness to accept appointment where the vacancy exists.

Appointees to certain positions will be expected to make physical examination of female workers and immigrants, conduct sanitary surveys, and perform other duties of routine character.

Applicants must have graduated from a medical school of recognized standing, and must show that they have had experience which has rendered them proficient in infant welfare work, school and community hygiene, and analogous problems.

Applicants must have reached their twenty-first but not their forty-fifth birthday on the date of the examination.

Applicants must submit with their applications their photographs, taken within two years. Tintypes or proofs will not be accepted.

The medical certificate in the application form must be executed by an officer of the Public Health Service, except that when this requirement would work a hardship upon an applicant because of her distance from such officer she may have the certificate executed by any physician. In this event, however, she may be required to pass a physical examination before an officer of the Public Health Service before appointment.

This examination is open to all female citizens of the United States who meet the requirements.

Applicants should at once apply for Form 1312, stating the title of the examination desired, to the Civil Service Commission, Washington, D. C.; the Secretary of the United States Civil Service Board, Customhouse, Boston, Mass., New York, N. Y., New Orleans, La., Honolulu, Hawaii; Post Office, Philadelphia, Pa., Atlanta, Ga., Cincinnati, Ohio, Chicago, Ill., St. Paul, Minn., Seattle, Wash., San Francisco, Cal.; Old Customhouse, St. Louis, Mo.; Administration Building, Balboa Heights, Canal Zone; or to the Chairman of the Porto Rican Civil Service Commission, San Juan, P. R.

Applications should be properly executed, excluding the county officer's certificate, and must be filed with the Civil Service Commission, Washington, D. C., prior to the hour of closing business on May 21, 1918.

SOCIETY NOTICES.

ESSEX NORTH DISTRICT MEDICAL SOCIETY.—The Annual Meeting of this Society will be held Wednesday, May 1, 1918, at Y.M.C.A., 40 Lawrence Street, Lawrence. (Tel. 1260.)

Dinner will be served at 12.30 sharp.

The business meeting and papers will follow immediately. The Vice-President has arranged the following interesting papers:

"Control and Cure of Cancer"
by Edw. Reynolds, M.D., of Boston (40 minutes).
"German Lies and German Spies"
by Rev. J. Franklin Babb, of Haverhill (30 minutes).

The next meeting of the Censors will be held at Hotel Bartlett, Haverhill, Thursday, May 2, 1918, at 2 P.M. sharp. Candidates should bring diploma.

T. R. HEALY, M.D., *President*,
J. FORREST BURNHAM, M.D., *Secretary*.

NORFOLK SOUTH DISTRICT MEDICAL SOCIETY.—Annual Meeting at United States Hotel, Boston, Thursday, May 2, 1918, at 11.30 A.M.

Election of officers.

Annual address by the President.

Censors will meet at 2 P.M. to examine candidates for fellowship. Candidates should make application to the Secretary a week before examination.

F. H. MERRIAM, M.D., *Secretary*.

The Censors of the Essex South District will meet at the new Salem Hospital Thursday, May 2, 3.30 P.M., for the examination of candidates for admission to the Society. All members throughout the District are requested to bring this notice to the attention of non-members, who can obtain further information from the secretary.

H. P. BENNETT, M.D., *Secretary*.